
TRAFFIC CONCEPTS, INC.

Traffic Impact Studies • Feasibility • Traffic Signal Design • Traffic Counts • Expert Testimony

September 19, 2014

Mr. Alex Rawls, Transportation Planner
Department of Planning and Zoning
Harford County Government
220 South Main Street
Bel Air, MD 21014

RE: Eva Mar – Traffic Impact Study
TIA14-086, series1
SHA Tracking No. 14APHA017XX
T/C 2865

PLAN TYPE	TIA
PLAN NO.	14-086
SERIES NO.	1A
DATE	9/26/14
DAC/DUE	

Dear Mr. Rawls:

We are pleased to submit the following point by point letter that addresses your comment letter dated August 12, 2014.

- 1) *Trip Generation: The trip generation should be based on the number of units not number of occupied units.*

The trip generation for the 541 unit CCRC using the number of occupied units (E) compared to the number of units (U) provides a greater number of peak hour trips. Therefore, the report shows a worst case trip generation scenario and requires no changes. The ITE work sheets are attached for your approval. Additionally, the fitted curve equations are used for all trip generation scenarios when provided by the ITE manual.

- 2) *Traffic Counts:*

As required, we have recounted the following intersections:

MD 543 @ Prospect Mill Road
MD 543 @ Henderson Road
MD 543 @ Amyclae Drive
Moores Mill Road @ Southampton Road
Anyclae Drive @ Cloverfield Court
Shakespeare Drive @ Fallstaff Road
Prospect Mill Road @ Thomas Run Road

The recounted intersection peak hour volumes are displayed on exhibit 3. This exhibit is attached for your review.

- 3) Signal Warrant Analysis: Counts taken on MD 543 south of Sparta Court were taken after C. Milton Wright's High School graduation. Counts will need to be retaken when all students are in class.

The MD 543 (Main Street) through volumes as counted exceeds the warrant amount for all warrants tested. The site access volume (left turns) is the important volume necessary to prompt signal control. Therefore, a recount of the MD 543 volume is not necessary.

- 4) MD 543 @ Site Access: The lane configuration identified in the report's conclusions does not match the lane configuration improvement in Exhibit 2. If a westbound right turn lane is constructed, it will need to be channelized. In addition, the signal warrant analysis will need to be redone.

Exhibit 2 is revised to show a left/thru lane and a separate right turn lane. This lane use matches the signal warrant analysis. The site access geometry will be constructed to meet the SHA and County requirements.

The signal warrant analysis excludes right turns from the total site volume as is customary. We do not believe that the warrant analysis must be redone at this time due to MD 543 volumes or the proposed lane configuration at the site entrance. As stated, the MD 543 warrants are not in question. We understand that SHA may require a second warrant analysis with the actual site generated traffic volumes before a signal is approved at this intersection.

- 5) MD 543 @ Prospect Mill Road: A queuing analysis is required to determine the length of the proposed southbound left turn lane.

The HCM analysis (future Improved) is provided as an attachment and shows a southbound MD 543 vehicle queue of 94 feet in the AM peak hour and 104 feet in the PM peak hour. The intersection improvement plan will provide adequate southbound MD 543 left turn lane storage that is 150 feet plus a required taper that meets the SHA standard. The queuing information is shown on the HCM work sheet.

- 6) MD 543 @ Amyclae Drive: *The improvement identified will not be accepted as mitigation as described. There is currently a traffic calming island on Amyclae Drive so the developer could not simply restripe this westbound approach. In addition, the right turn lane will need to be channelized. The existing SB MD 543 acceleration lane will need to connect to existing SB approach lanes to the MD 22 intersection. This improvement will involve road widening with a bicycle capacity, instead of restriping and shifting the existing centerline.*

This intersection was recounted as required by Harford County. The mitigation improvement provides a southbound MD 543 left lane, a thru lane, and a thru/right lane. The HCM analysis shows that the westbound Amyclae approach to MD 543 is no longer needed with the two southbound MD 543 thru lanes. The design will meet all MD SHA construction policies and standards.

- 7) MD 22 @ MD 543: *If the improvement identified by the developer is accepted as mitigation, it will need to be constructed in accordance with SHA standards.*

We understand SHA must approve the design of this mitigation measure.

- 8) MD 22 @ Prospect Mill Road: *The analysis shows a lane configuration with a SB Prospect Mill Road left turn lane with 90 feet of storage. This approach was restriped with a SB right turn lane with 125 feet of storage and a continuous left turn lane.*

We have revised the MD 22 @ Prospect Mill Road intersection analysis to reflect the existing lane configuration. The queuing analysis for this intersection shows a continuous left turn lane along Prospect Mill Road.

The intersections requiring mitigation remain as stated in the original traffic report. We understand that the following mitigation measures are subject to SHA approval

- MD 22 @ MD 543 – Widen MD 22 to provide a second thru lane (780 feet) in the eastbound direction.
- MD 543 @ Prospect Mill Road – Provide a two-way center turn lane along MD 543 and a MD 543 southbound left turn lane (150 feet + taper).
- MD 543 @ Amyclae Drive – Provide a second southbound MD 543 thru lane.
- Site access @ MD 543 – Provide intersection improvements as required by SHA with possible signal control.

Mr. Alex Rawls, Transportation Planner
September 19, 2014
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With this revised traffic impact study and mitigation, we believe this project can be approved from a traffic impact standpoint.

Sincerely,

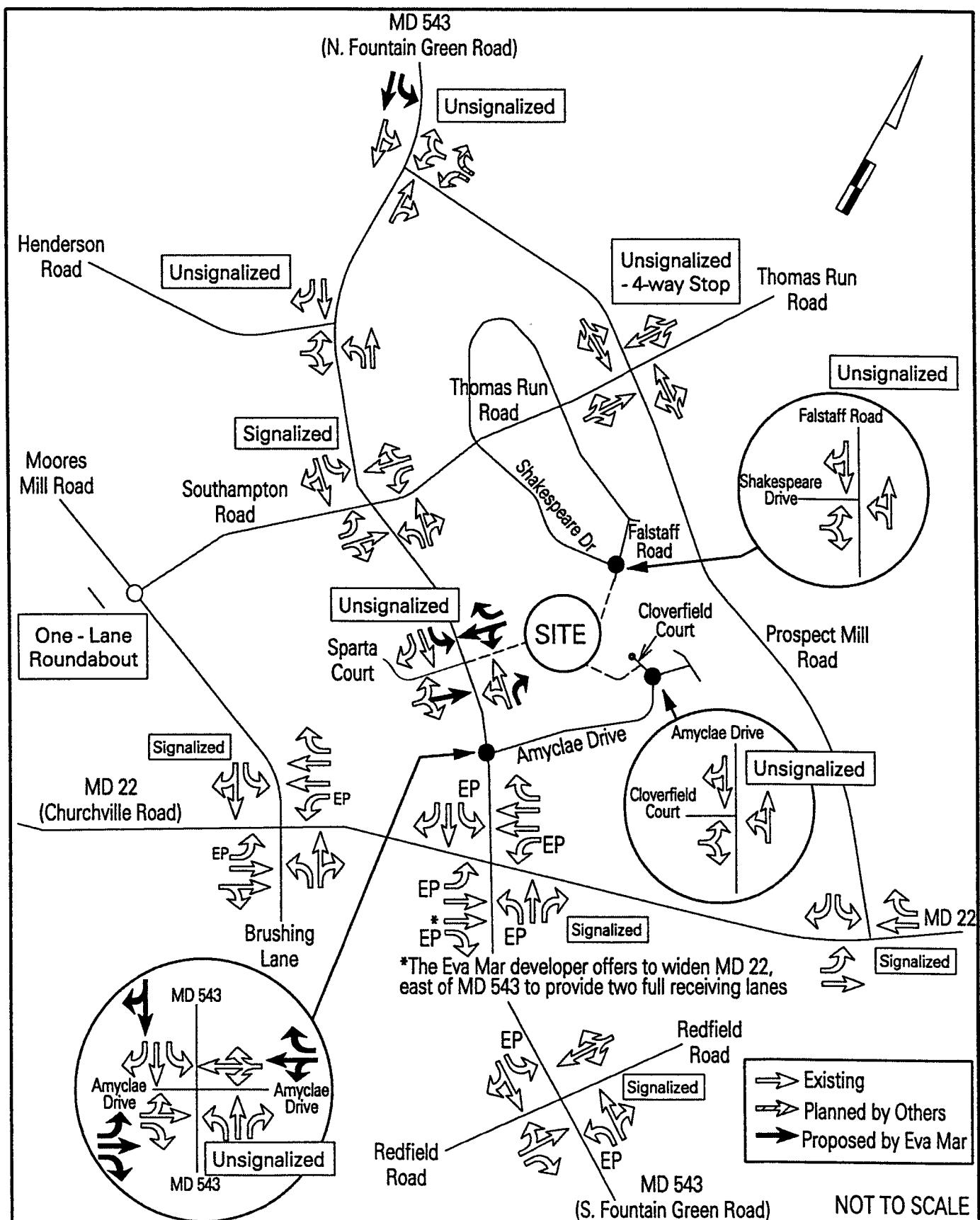
TRAFFIC CONCEPTS, INC.



Mark Keeley, PTP
Project Manager
MKeely@traffic-concepts.com

cc: Mr. Michael Charlton
Ms. Sue Shea
Mr. Paul Muddiman
Ms. Megan Muffeo
Mr. Joseph Snee

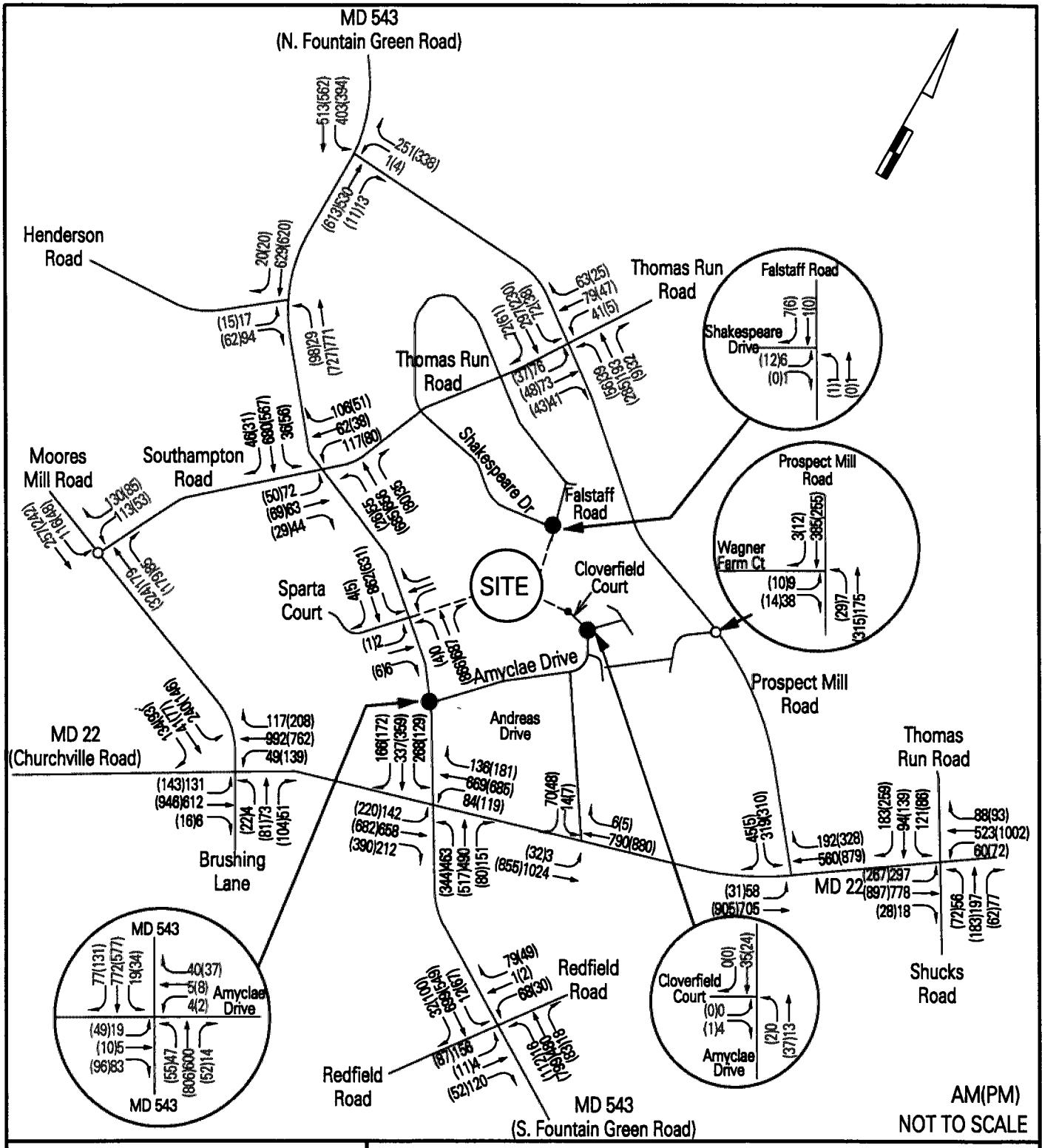
Attachments: Traffic Impact Study Revisions



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7525 Connelley Drive
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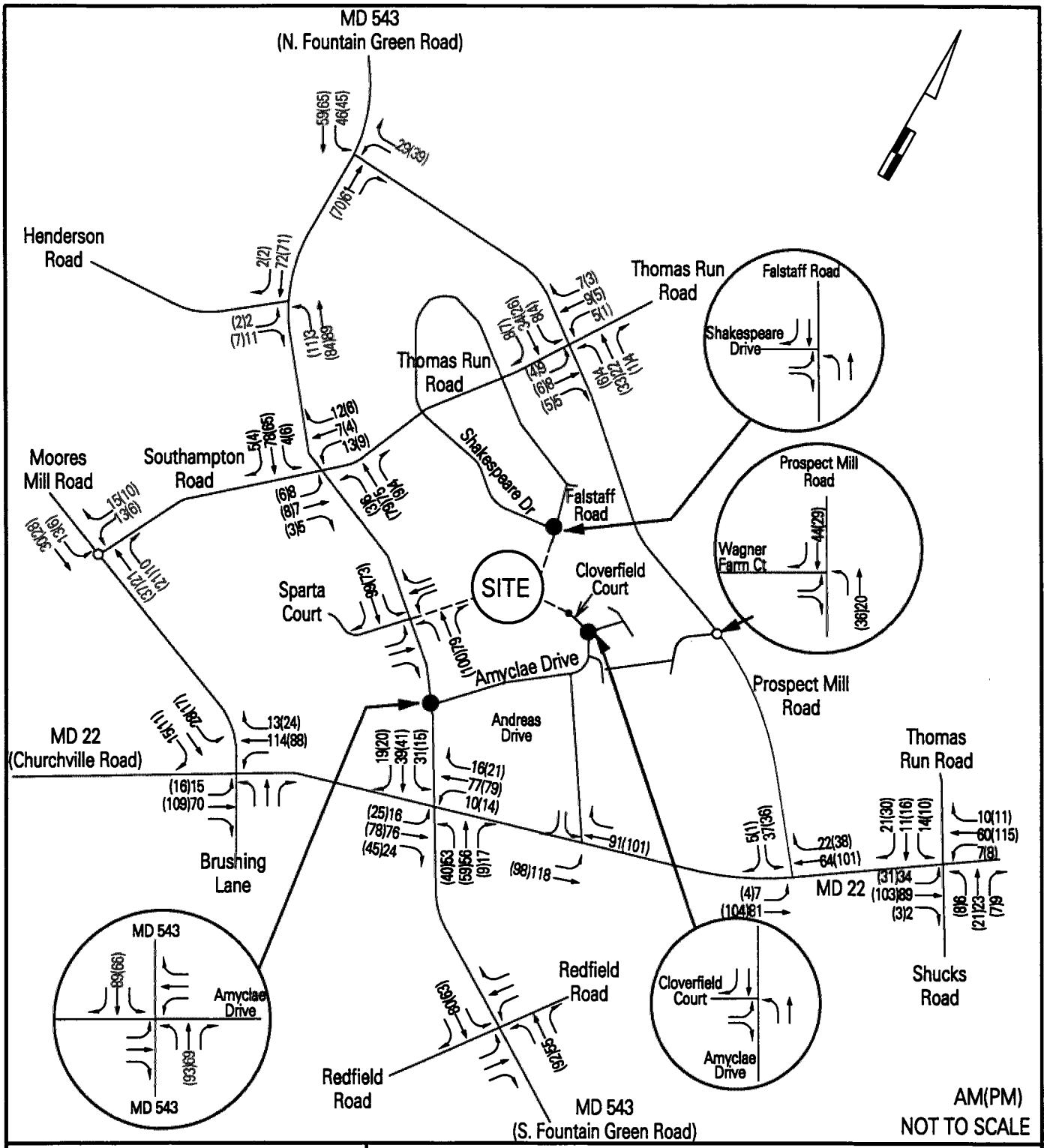
EXHIBIT 2

Lane Configuration



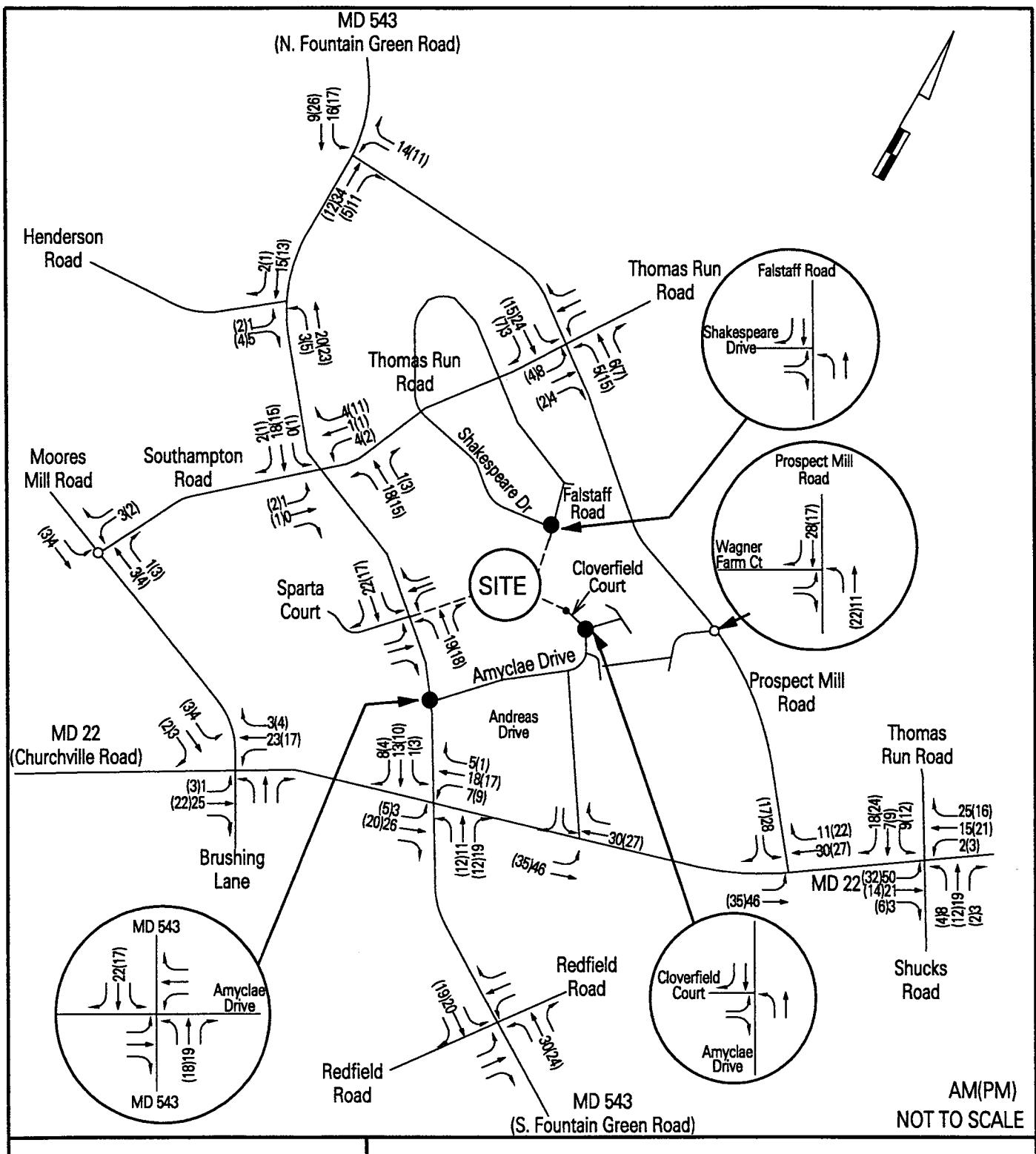
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EXHIBIT 3
Existing Traffic Volumes



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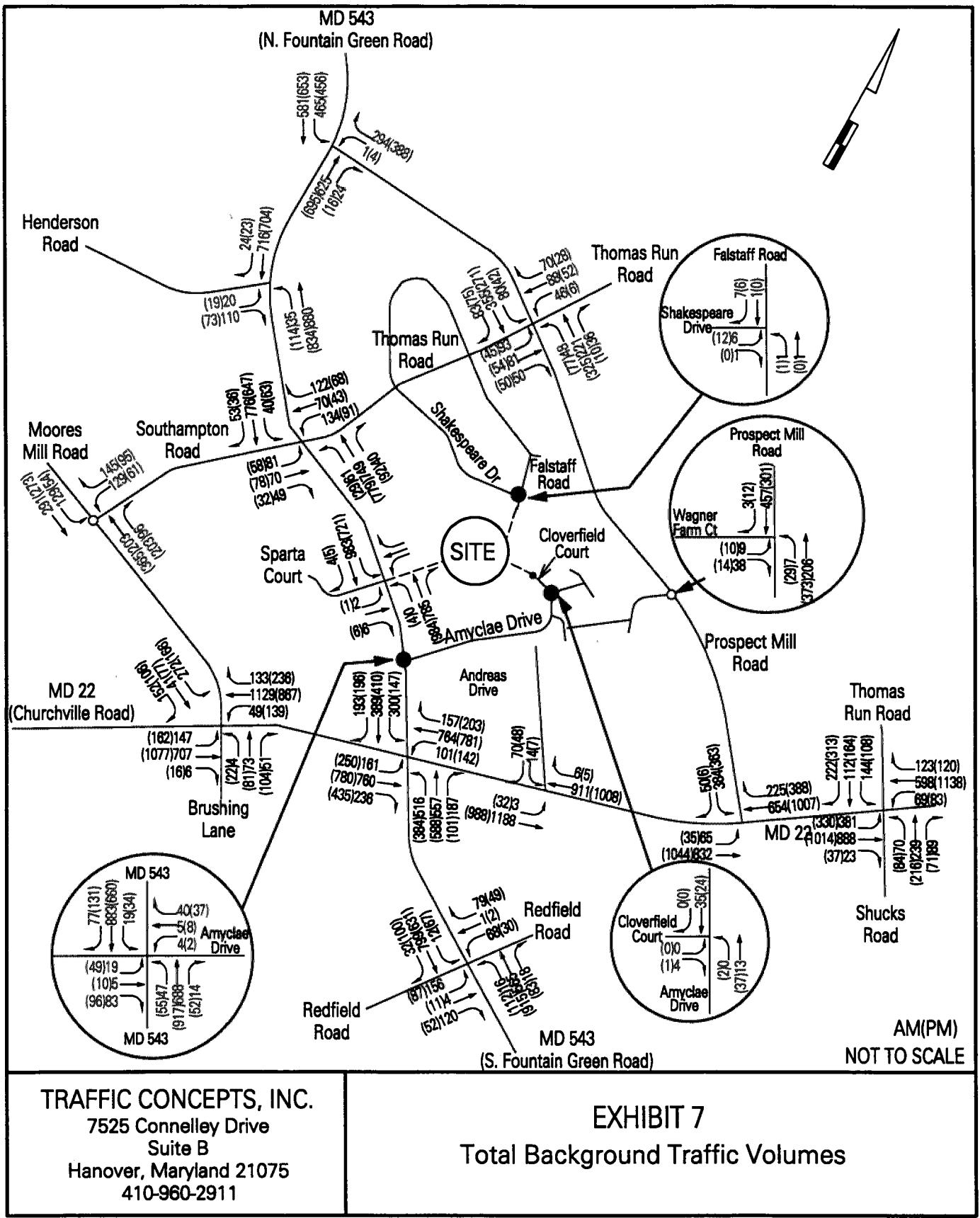
EXHIBIT 4
Projected Growth Rates
(2.2% for five years)



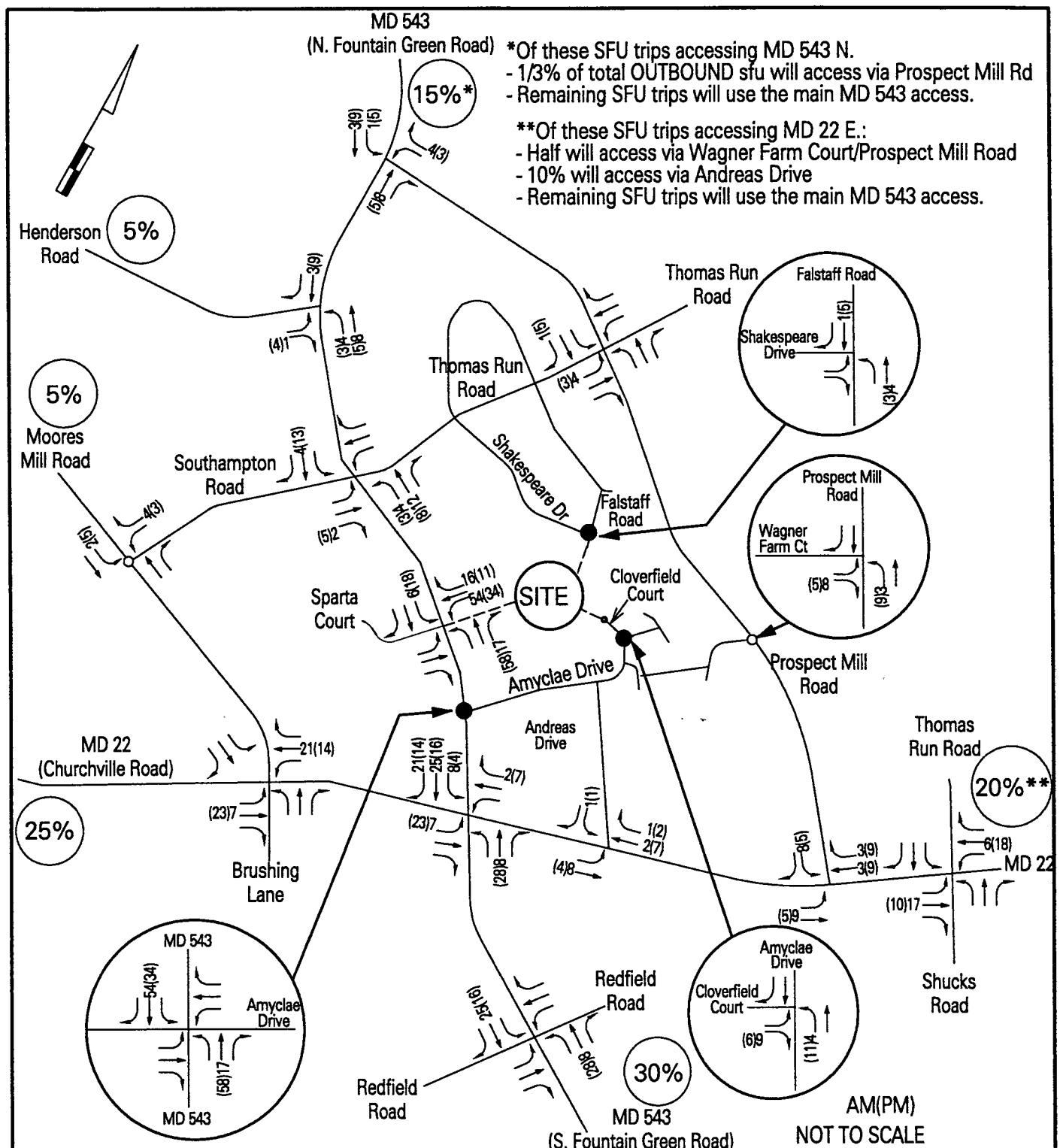
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EXHIBIT 6

Background Traffic Volumes

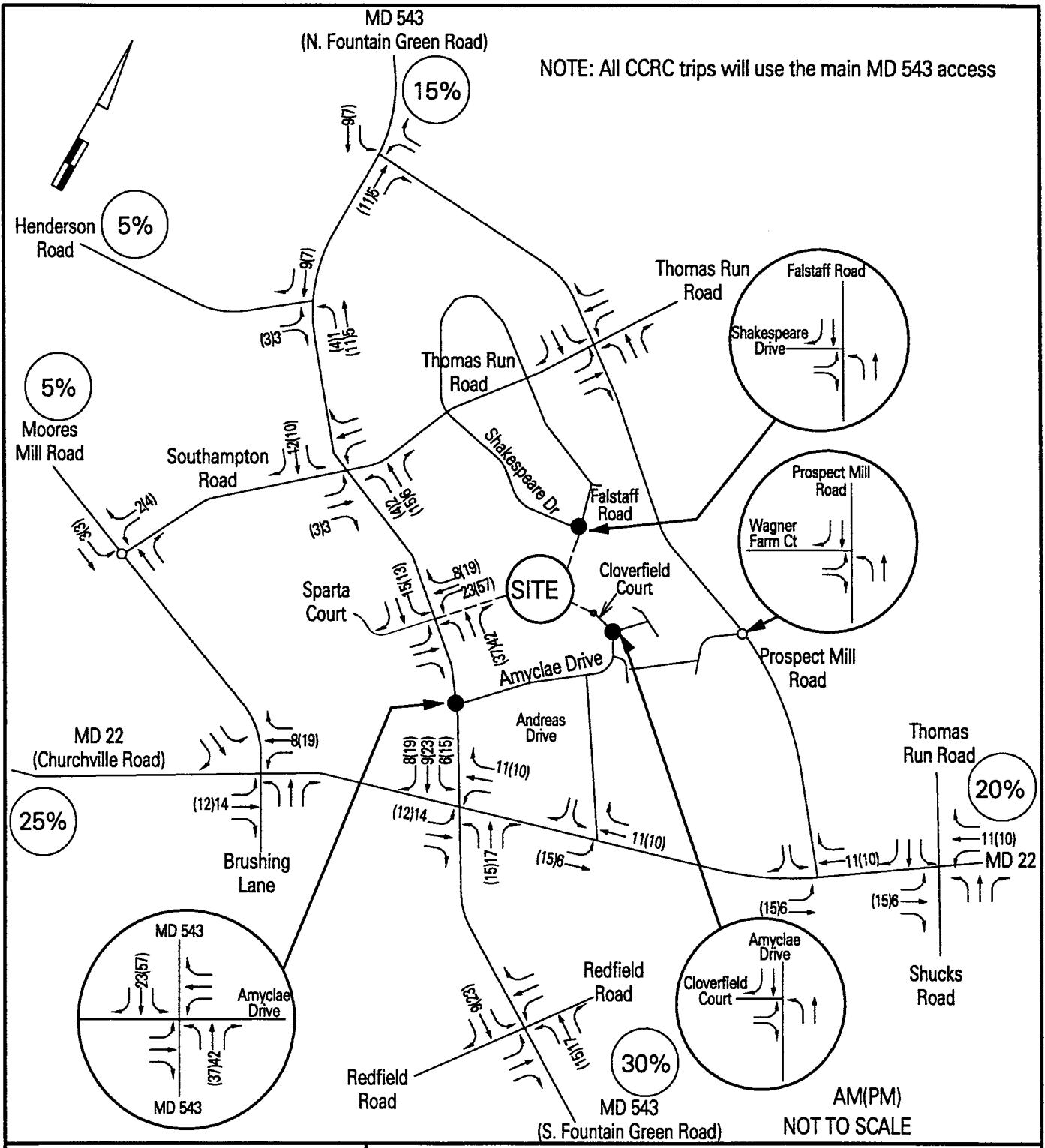


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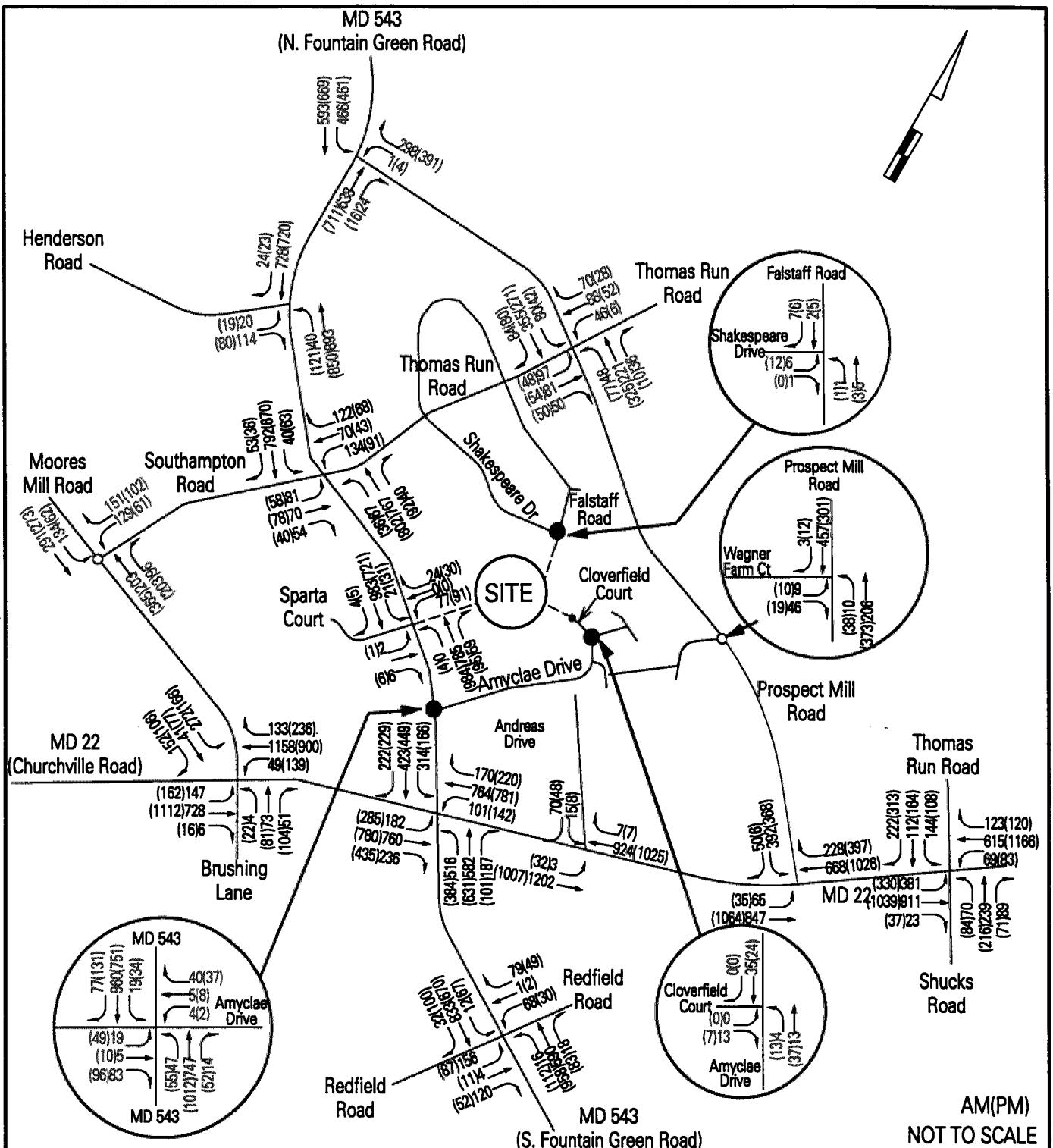


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EXHIBIT 8
Site Generated Traffic - (Single Family Units)



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FUTURE CONDITION - REVISED ANALYSES – WITH IMPROVEMENTS

HCM - UNSIGNALIZED INTERSECTIONS

MD 543 @ Prospect Mill Road + SB Left + TWLTL

	Control Delay <u>AM(PM)</u>	LOS <u>AM(PM)</u>	Delay By Approach <u>AM(PM)</u>	LOS By Approach <u>AM(PM)</u>
Southbound				
Left/Thru	14.4(15.7)	B(C)		
Westbound				
Left	57.9(71.6)	F(F)	33.5(98.8)	D(F)
	Right	33.4(99.0)	D(F)	

MD 543 @ Amyclae Drive

	Control Delay <u>AM(PM)</u>	LOS <u>AM(PM)</u>	Delay By Approach <u>AM(PM)</u>	LOS By Approach <u>AM(PM)</u>
Northbound				
Left	11.2(9.8)	B(A)		
Southbound				
Left	9.5(10.5)	A(B)		
Westbound				
Left/Thru/Right	30.9(36.1)	E(E)	30.9(36.1)	E(E)
Eastbound				
Left/Thru	319.7(680.0)	F(F)	80.9(265.4)	F(F)
	Right	13.1(11.6)	B(B)	

TWO-WAY STOP CONTROL SUMMARY													
General Information				Site Information									
Analyst	J. Carey			Intersection		MD 543 @ Prospect Mill Road							
Agency/Co.	Traffic Concepts, Inc.			Jurisdiction		Harford County, MD							
Date Performed	9/1/2014			Analysis Year		Future Condition + SB L+TWLTL							
Analysis Time Period	PM Peak												
Project Description 2865 Evamar Farms													
East/West Street: Prospect Mill Road			North/South Street: MD 543										
Intersection Orientation: North-South			Study Period (hrs): 0.25										
Vehicle Volumes and Adjustments													
Major Street	Northbound				Southbound								
	Movement	1	2	3	4	5	6						
		L	T	R	L	T	R						
Volume (veh/h)			638	24	466	593							
Peak-Hour Factor, PHF	0.90	0.92	0.92	0.92	0.92	0.92	0.90						
Hourly Flow Rate, HFR (veh/h)	0	693	26	506	644	0							
Percent Heavy Vehicles	0	--	--	2	--	--							
Median Type Two Way Left Turn Lane													
RT Channelized				0			0						
Lanes	0	1	0	1	1	1	0						
Configuration				TR	L	T							
Upstream Signal			0			0							
Minor Street	Eastbound			Westbound									
	Movement	7	8	9	10	11	12						
		L	T	R	L	T	R						
Volume (veh/h)					1		298						
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.92	0.90	0.90	0.92						
Hourly Flow Rate, HFR (veh/h)	0	0	0	1	0	0	323						
Percent Heavy Vehicles	0	0	0	2	0	0	2						
Percent Grade (%)		0			0								
Flared Approach		N			N								
Storage		0			0								
RT Channelized				0			0						
Lanes	0	0	0	1	0	0	1						
Configuration					L		R						
Delay, Queue Length, and Level of Service													
Approach	Northbound		Southbound		Westbound		Eastbound						
	1	4	7	8	9	10	11	12					
Movement			L	L	R								
Lane Configuration													
v (veh/h)		506	1		323								
C (m) (veh/h)		882	69		436								
v/c		0.57	0.01		0.74								
95% queue length		3.74 q4	0.04		6.01								
Control Delay (s/veh)		14.4	57.9		33.4								
LOS		B	F		D								
Approach Delay (s/veh)	--	--		33.5									
Approach LOS	--	--		D									

TWO-WAY STOP CONTROL SUMMARY										
General Information		Site Information								
Analyst	J. Carey	Intersection			MD 543 @ Prospect Mill Road					
Agency/Co.	Traffic Concepts, Inc.	Jurisdiction			Harford County, MD					
Date Performed	9/1/2014	Analysis Year			Future Condition + SB L+TWLTL					
Analysis Time Period	PM Peak									
Project Description 2865 Evamar Farms										
East/West Street: Prospect Mill Road		North/South Street: MD 543								
Intersection Orientation: North-South		Study Period (hrs): 0.25								
Vehicle Volumes and Adjustments										
Major Street	Northbound				Southbound					
	Movement	1	2	3	4	5	6			
		L	T	R	L	T	R			
Volume (veh/h)		711	16		461	669				
Peak-Hour Factor, PHF	0.90	0.92	0.92		0.92	0.92	0.90			
Hourly Flow Rate, HFR (veh/h)	0	772	17		501	727	0			
Percent Heavy Vehicles	0	-	-		2	-	-			
Median Type Two Way Left Turn Lane										
RT Channelized			0				0			
Lanes	0	1	0		1	1	0			
Configuration			TR		L	T				
Upstream Signal		0				0				
Minor Street	Eastbound			Westbound						
	Movement	7	8	9	10	11	12			
		L	T	R	L	T	R			
Volume (veh/h)					4		391			
Peak-Hour Factor, PHF	0.90	0.90	0.90		0.92	0.90	0.92			
Hourly Flow Rate, HFR (veh/h)	0	0	0		4	0	424			
Percent Heavy Vehicles	0	0	0		2	0	2			
Percent Grade (%)		0				0				
Flared Approach			N			N				
Storage			0			0				
RT Channelized				0			0			
Lanes	0	0	0		1	0	1			
Configuration					L		R			
Delay, Queue Length, and Level of Service										
Approach	Northbound		Southbound		Westbound		Eastbound			
	Movement	1	4	7	8	9	10	11	12	
Lane Configuration			L	L		R				
v (veh/h)			501	4		424				
C (m) (veh/h)			831	58		395				
v/c			0.60	0.07		1.07				
95% queue length		*	4.14 104	0.22		14.55				
Control Delay (s/veh)			15.7	71.6		99.0				
LOS			C	F		F				
Approach Delay (s/veh)	--	--		98.8						
Approach LOS	--	--		F						

TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information						
Analyst			Intersection			MD 543 & Amyclae Drive			
Agency/Co.			Jurisdiction			Harford County, MD			
Date Performed			Analysis Year			Future Condition +Improvements			
Analysis Time Period									
Project Description 2865 Evamar Farms									
East/West Street: Amyclae Drive			North/South Street: MD 543						
Intersection Orientation: North-South			Study Period (hrs): 0.25						
Vehicle Volumes and Adjustments									
Major Street		Northbound			Southbound				
Movement		1	2	3	4	5	6		
		L	T	R	L	T	R		
Volume (veh/h)		47	747	14	19	960	77		
Peak-Hour Factor, PHF		0.94	0.94	0.94	0.94	0.94	0.94		
Hourly Flow Rate, HFR (veh/h)		50	794	14	20	1021	81		
Percent Heavy Vehicles		2	-	-	2	-	-		
Median Type Undivided									
RT Channelized				0			0		
Lanes		1	1	1	1	2	0		
Configuration		L	T	R	L	T	TR		
Upstream Signal			0			0			
Minor Street		Eastbound			Westbound				
Movement		7	8	9	10	11	12		
		L	T	R	L	T	R		
Volume (veh/h)		19	5	83	4	5	40		
Peak-Hour Factor, PHF		0.94	0.94	0.94	0.94	0.94	0.94		
Hourly Flow Rate, HFR (veh/h)		20	5	88	4	5	42		
Percent Heavy Vehicles		2	2	2	2	2	2		
Percent Grade (%)			0			0			
Flared Approach			N			N			
Storage			0			0			
RT Channelized				0			0		
Lanes		0	1	1	0	1	0		
Configuration		LT		R		LTR			
Delay, Queue Length, and Level of Service									
Approach		Northbound	Southbound	Westbound			Eastbound		
Movement		1	4	7	8	9	10		
Lane Configuration		L	L		LTR		LT		
v (veh/h)		50	20		51		25		
C (m) (veh/h)		629	813		189		29		
v/c		0.08	0.02		0.27		0.86		
95% queue length		0.26	0.08		1.05		2.82		
Control Delay (s/veh)		11.2	9.5		30.9		319.7		
LOS		B	A		D		F		
Approach Delay (s/veh)		--	--		30.9		80.9		
Approach LOS		--	--		D		F		

TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information			
Analyst			Intersection			
Agency/Co.			Jurisdiction			
Date Performed			Analysis Year			
Analysis Time Period			Future Condition +Improvements			
Project Description 2865 Evamar Farms						
East/West Street: Amyclae Drive			North/South Street: MD 543			
Intersection Orientation: North-South			Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments						
Major Street		Northbound			Southbound	
Movement		1	2	3	4	5
		L	T	R	L	T
Volume (veh/h)		55	917	52	34	660
Peak-Hour Factor, PHF		0.97	0.97	0.97	0.97	0.97
Hourly Flow Rate, HFR (veh/h)		56	945	53	35	680
Percent Heavy Vehicles		2	-	-	2	-
Median Type Undivided						
RT Channelized				0		0
Lanes	1	1	1		1	2
Configuration	L	T	R	L	T	TR
Upstream Signal			0			0
Minor Street		Eastbound			Westbound	
Movement		7	8	9	10	11
		L	T	R	L	T
Volume (veh/h)		49	10	96	2	8
Peak-Hour Factor, PHF		0.97	0.97	0.97	0.97	0.97
Hourly Flow Rate, HFR (veh/h)		50	10	98	2	8
Percent Heavy Vehicles		2	2	2	2	2
Percent Grade (%)			0			0
Flared Approach			N			N
Storage			0			0
RT Channelized				0		0
Lanes	0	1	1	0	1	0
Configuration	LT		R		LTR	
Delay, Queue Length, and Level of Service						
Approach		Northbound	Southbound	Westbound		Eastbound
Movement		1	4	7	8	9
Lane Configuration	L	L		LTR		LT
v (veh/h)		56	35		48	60
C (m) (veh/h)		808	689		163	32
v/c		0.07	0.05		0.29	1.88
95% queue length		0.22	0.16		1.16	6.81
Control Delay (s/veh)		9.8	10.5		36.1	680.0
LOS	A	B		E		F
Approach Delay (s/veh)	-	--		36.1		265.4
Approach LOS	-	--		E		F

EXISTING CONDITION - REVISED ANALYSES

HCM - UNSIGNALIZED INTERSECTIONS

MD 543 @ Prospect Mill Road

		<u>Control Delay AM(PM)</u>	<u>LOS AM(PM)</u>	<u>Delay By Approach AM(PM)</u>	<u>LOS By Approach AM(PM)</u>
Southbound	Left/Thru	11.5(12.3)	B(B)		
Westbound	Left/Right	21.3(64.6)	C(F)	21.3(64.6)	C(F)

MD 543 @ Henderson Road

		<u>Control Delay AM(PM)</u>	<u>LOS AM(PM)</u>	<u>Delay By Approach AM(PM)</u>	<u>LOS By Approach AM(PM)</u>
Northbound	Left	9.2(9.5)	A(A)		
Eastbound	Left/Right	24.5(24.8)	C(C)	24.5(24.8)	C(C)

MD 543 @ Amyclae Drive

		<u>Control Delay AM(PM)</u>	<u>LOS AM(PM)</u>	<u>Delay By Approach AM(PM)</u>	<u>LOS By Approach AM(PM)</u>
Northbound	Left	10.1(9.4)	B(A)		
Southbound	Left	8.9(9.9)	A(A)		
Westbound	Left/Thru/Right	25.3(29.6)	D(D)	25.3(29.6)	D(D)
Eastbound	Left/Thru	81.1(215.0)	F(F)	31.6(90.2)	D(F)
	Right	17.6(13.8)	C(B)		

Prospect Mill Road @ Thomas Run Road (All-way Stop)

		<u>Control Delay AM(PM)</u>	<u>LOS AM(PM)</u>	<u>Delay By Approach AM(PM)</u>	<u>LOS By Approach AM(PM)</u>
Eastbound	L/T/R	20.9(13.5)	C(B)	20.9(13.5)	C(B)
Westbound	L/T/R	13.4(14.5)	B(B)	13.4(14.5)	B(B)
Northbound	L/T/R	12.8(10.7)	B(B)	12.8(10.7)	B(B)
Southbound	L/T/R	12.4(10.0)	B(A)	12.4(10.0)	A(A)

AM Intersection: Delay = 16.3 sec/veh; LOS = C

PM Intersection: Delay = 13.2 sec/veh; LOS = B

EXISTING CONDITION - REVISED ANALYSES (CONTINUED)

HCM - UNSIGNALIZED INTERSECTIONS

Amyclae Drive @ Cloverfield Court

		<u>Control Delay AM(PM)</u>	<u>LOS AM(PM)</u>	<u>Delay By Approach AM(PM)</u>	<u>LOS By Approach AM(PM)</u>
Northbound	Left/Thru	7.3(7.3)	A(A)		
Eastbound	Left/Right	8.5(8.4)	A(A)	8.5(8.4)	A(A)

Shakespeare Drive @ Fallstaff Road

		<u>Control Delay AM(PM)</u>	<u>LOS AM(PM)</u>	<u>Delay By Approach AM(PM)</u>	<u>LOS By Approach AM(PM)</u>
Northbound	Left/Thru	7.2(7.2)	A(A)		
Eastbound	Left/Right	8.5(8.6)	A(A)	8.5(8.6)	A(A)

SIDRA ROUNDABOUT ANALYSIS

	<u>AM Delay(LOS)</u>	<u>PM Delay(LOS)</u>
Moores Mill Road @ Southampton Road	6.9(A)	5.5(A)

BACKGROUND CONDITION - REVISED ANALYSES

HCM - UNSIGNALIZED INTERSECTIONS

MD 543 @ Prospect Mill Road

		<u>Control Delay AM(PM)</u>	<u>LOS AM(PM)</u>	<u>Delay By Approach AM(PM)</u>	<u>LOS By Approach AM(PM)</u>
Southbound					
	Left/Thru	14.1(15.2)	B(C)		
Westbound					
	Left	216.5(344.1)	F(F)	31.8(91.1)	D(F)
	Right	31.2(88.7)	D(F)		

MD 543 @ Henderson Road

		<u>Control Delay AM(PM)</u>	<u>LOS AM(PM)</u>	<u>Delay By Approach AM(PM)</u>	<u>LOS By Approach AM(PM)</u>
Northbound					
	Left	9.7(10.0)	A(B)		
Eastbound					
	Left	68.4(83.3)	F(F)	26.1(29.7)	D(D)
	Right	18.5(15.9)	C(C)		

MD 543 @ Amyclae Drive

		<u>Control Delay AM(PM)</u>	<u>LOS AM(PM)</u>	<u>Delay By Approach AM(PM)</u>	<u>LOS By Approach AM(PM)</u>
Northbound					
	Left	10.7(9.8)	B(A)		
Southbound					
	Left	9.3(10.5)	A(A)		
Westbound					
	Left/Thru/Right	34.5(40.2)	D(E)	34.5(40.2)	D(E)
Eastbound					
	Left/Thru	138.6(423.6)	F(F)	46.6(170.3)	E(F)
	Right	20.5(15.2)	C(C)		

Prospect Mill Road @ Thomas Run Road (All-way Stop)

		<u>Control Delay AM(PM)</u>	<u>LOS AM(PM)</u>	<u>Delay By Approach AM(PM)</u>	<u>LOS By Approach AM(PM)</u>
Eastbound					
	L/T/R	44.1(18.2)	E(C)	44.1(18.2)	E(C)
Westbound					
	L/T/R	18.6(20.6)	C(C)	18.6(20.6)	C(C)
Northbound					
	L/T/R	16.2(12.1)	C(B)	16.2(12.1)	C(B)
Southbound					
	L/T/R	15.2(11.0)	C(B)	15.2(11.0)	C(B)

AM Intersection: Delay = 28.2 sec/veh; LOS = D
PM Intersection: Delay = 17.7 sec/veh; LOS = C

BACKGROUND CONDITION - REVISED ANALYSES (CONTINUED)

HCM - UNSIGNALIZED INTERSECTIONS

Amyclae Drive @ Cloverfield Court

	<u>Control Delay AM(PM)</u>	<u>LOS AM(PM)</u>	<u>Delay By Approach AM(PM)</u>	<u>LOS By Approach AM(PM)</u>
Northbound Left/Thru	7.3(7.3)	A(A)		
Eastbound Left/Right	8.5(8.4)	A(A)	8.5(8.4)	A(A)

Shakespeare Drive @ Fallstaff Road

	<u>Control Delay AM(PM)</u>	<u>LOS AM(PM)</u>	<u>Delay By Approach AM(PM)</u>	<u>LOS By Approach AM(PM)</u>
Northbound Left/Thru	7.2(7.2)	A(A)		
Eastbound Left/Right	8.5(8.6)	A(A)	8.5(8.6)	A(A)

SIDRA ROUNDABOUT ANALYSIS

	<u>AM Delay(LOS)</u>	<u>PM Delay(LOS)</u>
Moores Mill Road @ Southampton Road	7.1(A)	5.7(A)

FUTURE CONDITION - REVISED ANALYSES

HCM - UNSIGNALIZED INTERSECTIONS

MD 543 @ Prospect Mill Road

		Control Delay <u>AM(PM)</u>	LOS <u>AM(PM)</u>	Delay By Approach <u>AM(PM)</u>	LOS By Approach <u>AM(PM)</u>
Southbound					
	Left/Thru	14.4(15.7)	B(C)		
Westbound					
	Left	229.6(414.8)	F(F)	34.0(102.0)	D(F)
	Right	33.4(99.0)	D(F)		

MD 543 @ Henderson Road

		Control Delay <u>AM(PM)</u>	LOS <u>AM(PM)</u>	Delay By Approach <u>AM(PM)</u>	LOS By Approach <u>AM(PM)</u>
Northbound					
	Left	9.8(10.2)	A(B)		
Eastbound					
	Left	74.3(92.5)	F(F)	27.3(30.9)	D(D)
	Right	19.0(16.5)	C(C)		

MD 543 @ Amyclae Drive

		Control Delay <u>AM(PM)</u>	LOS <u>AM(PM)</u>	Delay By Approach <u>AM(PM)</u>	LOS By Approach <u>AM(PM)</u>
Northbound					
	Left	11.2(10.2)	B(B)		
Southbound					
	Left	9.5(11.0)	A(B)		
Westbound					
	Left/Thru/Right	45.2(57.1)	E(F)	45.2(57.1)	E(F)
Eastbound					
	Left/Thru	207.1(748.3)	F(F)	63.7(294.7)	F(F)
	Right	23.0(17.0)	C(C)		

Prospect Mill Road @ Thomas Run Road (All-way Stop)

		Control Delay <u>AM(PM)</u>	LOS <u>AM(PM)</u>	Delay By Approach <u>AM(PM)</u>	LOS By Approach <u>AM(PM)</u>
Eastbound					
	L/T/R	45.3(18.6)	E(C)	45.3(18.6)	E(C)
Westbound					
	L/T/R	18.8(20.9)	C(C)	18.8(20.9)	C(C)
Northbound					
	L/T/R	16.5(12.3)	C(B)	16.5(12.3)	C(B)
Southbound					
	L/T/R	15.4(11.1)	C(B)	15.4(11.1)	C(B)

AM Intersection: Delay = 28.8 sec/veh; LOS = D
PM Intersection: Delay = 18.0 sec/veh; LOS = C

FUTURE CONDITION - REVISED ANALYSES (CONTINUED)

HCM - UNSIGNALIZED INTERSECTIONS

Amyclae Drive @ Cloverfield Court

		<u>Control Delay AM(PM)</u>	<u>LOS AM(PM)</u>	<u>Delay By Approach AM(PM)</u>	<u>LOS By Approach AM(PM)</u>
Northbound	Left/Thru	7.3(7.3)	A(A)		
Eastbound	Left/Right	8.5(8.5)	A(A)	8.5(8.5)	A(A)

Shakespeare Drive @ Fallstaff Road

		<u>Control Delay AM(PM)</u>	<u>LOS AM(PM)</u>	<u>Delay By Approach AM(PM)</u>	<u>LOS By Approach AM(PM)</u>
Northbound	Left/Thru	7.2(7.2)	A(A)		
Eastbound	Left/Right	8.6(8.6)	A(A)	8.6(8.6)	A(A)

SIDRA ROUNDABOUT ANALYSIS

	<u>AM Delay(LOS)</u>	<u>PM Delay(LOS)</u>
Moores Mill Road @ Southampton Road	7.2(A)	5.8(A)

QUEUEING ANALYSIS

As required by Harford County, a HCM 95th Percentile queuing analysis was conducted at all exclusive left turn lanes at the signalized key intersections. The queuing analysis was conducted at the background and at the future total build-out traffic conditions. The results are listed below and detailed calculations are included in Appendix I.

	Background Queue (feet) <u>AM(PM)</u>	Future Queue (feet) <u>AM(PM)</u>	Storage Bay (feet)	Site Adds (feet)
<u>MD 22 @ Moores Mill Rd</u>				
EB Left	90(108)	90(108)	Continuous	Adequate
WB Left	30(93)	30(93)	130	Adequate
NB Left	5(35)	5(35)	110	Adequate
SB Left	540(283)	540(283)	260	No Impact
<u>MD 22 @ MD 543</u>				
EB Left	203(278)	265(365)	390	Adequate
WB Left	123(170)	128(178)	Continuous	Adequate
NB Left	820(593)	823(600)	530*	Adequate*
SB Left	470(188)	498(208)	350	28
<u>MD 22 @ Prospect Mill Rd</u>				
EB Left	38(20)	38(23)	120	Adequate
SB Left	660(758)	675(775)	Continuous	Adequate
<u>MD 543 @ Southampton/ Thomas Run Rd</u>				
EB Left	45(28)	48(30)	150	Adequate
WB Left	73(45)	78(50)	275	Adequate
NB Left	30(8)	33(10)	175	Adequate
SB Left	18(25)	20(28)	175	Adequate
<u>MD 543 @ Redfield Rd</u>				
NB Left	3(20)	5(20)	Continuous	Adequate
SB Left	3(25)	3(25)	Continuous	Adequate
<u>MD 22 @ Thomas Run Rd</u>				
EB Left – MD 22	278(413)	278(423)	460	Adequate
WB Left – MD 22	63(65)	63(65)	465	Adequate
NB Left	110(155)	110(155)	305	Adequate
SB Left	233(200)	233(200)	120	No Impact

*Center two-way left turn lane continues for approximately 1.5 miles.

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	J. Carey			Intersection	MD 543 @ Prospect Mill Road		
Agency/Co.	Traffic Concepts, Inc.			Jurisdiction	Harford County, MD		
Date Performed	9/17/2014			Analysis Year	Existing Condition - Revised		
Analysis Time Period	AM Peak						
Project Description	2865 Evamar Farms						
East/West Street:	Prospect Mill Road			North/South Street:	MD 543		
Intersection Orientation:	North-South			Study Period (hrs):	0.25		
Vehicle Volumes and Adjustments							
Major Street		Northbound			Southbound		
Movement		1	2	3	4	5	6
		L	T	R	L	T	R
Volume (veh/h)			530	13	403	513	
Peak-Hour Factor, PHF	0.90		0.92	0.92	0.92	0.92	0.90
Hourly Flow Rate, HFR (veh/h)	0		576	14	438	557	0
Percent Heavy Vehicles	0		—	—	2	—	—
Median Type		Undivided					
RT Channelized				0			0
Lanes	0		1	0	0	1	0
Configuration				TR	LT		
Upstream Signal			0			0	
Minor Street		Eastbound			Westbound		
Movement		7	8	9	10	11	12
		L	T	R	L	T	R
Volume (veh/h)					1		251
Peak-Hour Factor, PHF	0.90		0.90	0.90	0.92	0.90	0.92
Hourly Flow Rate, HFR (veh/h)	0		0	0	1	0	272
Percent Heavy Vehicles	0		0	0	2	0	2
Percent Grade (%)			0			0	
Flared Approach			N			N	
Storage			0			0	
RT Channelized				0			0
Lanes	0		0	0	0	0	0
Configuration						LR	
Delay, Queue Length, and Level of Service							
Approach		Northbound	Southbound	Westbound			Eastbound
Movement		1	4	7	8	9	10
Lane Configuration			LT		LR		
v (veh/h)			438		273		
C (m) (veh/h)			985		488		
v/c			0.44		0.56		
95% queue length			2.32		3.38		
Control Delay (s/veh)			11.5		21.3		
LOS			B		C		
Approach Delay (s/veh)	—	—		21.3			
Approach LOS	—	—		C			

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	J. Carey				Intersection MD 543 @ Prospect Mill Road			
Agency/Co.	Traffic Concepts, Inc.				Jurisdiction Harford County, MD			
Date Performed	9/17/2014				Analysis Year Existing Condition - Revised			
Analysis Time Period	PM Peak							
Project Description	2865 Evamar Farms							
East/West Street:	Prospect Mill Road			North/South Street: MD 543				
Intersection Orientation:	North-South			Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments								
Major Street	Northbound				Southbound			
	Movement	1	2	3	4	5	6	
		L	T	R	L	T	R	
Volume (veh/h)		613		11	394	562		
Peak-Hour Factor, PHF	0.90	0.92	0.92	0.92	0.92	0.92	0.90	
Hourly Flow Rate, HFR (veh/h)	0	666		11	428	610	0	
Percent Heavy Vehicles	0	—	—	—	2	—	—	
Median Type	Undivided							
RT Channelized				0			0	
Lanes	0	1	0	0	1	0		
Configuration			TR	LT				
Upstream Signal		0				0		
Minor Street	Eastbound				Westbound			
	Movement	7	8	9	10	11	12	
		L	T	R	L	T	R	
Volume (veh/h)					4	—	338	
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.92	0.90	0.90	0.92	
Hourly Flow Rate, HFR (veh/h)	0	0	0	4	0	0	367	
Percent Heavy Vehicles	0	0	0	2	0	0	2	
Percent Grade (%)	0			0				
Flared Approach			N			N		
Storage			0			0		
RT Channelized				0			0	
Lanes	0	0	0	0	0	0	0	
Configuration						LR		
Delay, Queue Length, and Level of Service								
Approach	Northbound		Southbound		Westbound		Eastbound	
	1	4	7	8	9	10	11	12
Lane Configuration			LT		LR			
v (veh/h)			428		371			
C (m) (veh/h)			915		394			
v/c			0.47		0.94			
95% queue length			2.53		10.44			
Control Delay (s/veh)			12.3		64.6			
LOS			B		F			
Approach Delay (s/veh)	--	--			64.6			
Approach LOS	--	--			F			

TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information					
Analyst	J. Carey		Intersection	MD 543 @ Prospect Mill Road				
Agency/Co.	Traffic Concepts, Inc.		Jurisdiction	Harford County, MD				
Date Performed	9/17/2014		Analysis Year	BackgroundCondition - Revised				
Analysis Time Period	AM Peak							
Project Description	2865 Evamar Farms							
East/West Street:	Prospect Mill Road		North/South Street:	MD 543				
Intersection Orientation:	North-South		Study Period (hrs):	0.25				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
	Movement	1	2	3	4	5	6	
		L	T	R	L	T	R	
Volume (veh/h)			625	24	465	581		
Peak-Hour Factor, PHF	0.90	0.92	0.92	0.92	0.92	0.92	0.90	
Hourly Flow Rate, HFR (veh/h)	0	679	26	505	631		0	
Percent Heavy Vehicles	0	--	--	2	--	--		
Median Type	Undivided							
RT Channelized				0				0
Lanes	0	1	0	0	1		0	
Configuration				TR	LT			
Upstream Signal		0				0		
Minor Street	Eastbound			Westbound				
	Movement	7	8	9	10	11	12	
		L	T	R	L	T	R	
Volume (veh/h)					1		294	
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.92	0.90	0.90	0.92	
Hourly Flow Rate, HFR (veh/h)	0	0	0	1	0		319	
Percent Heavy Vehicles	0	0	0	2	0		2	
Percent Grade (%)		0			0			
Flared Approach			N			N		
Storage		0				0		
RT Channelized				0				0
Lanes	0	0	0	1	0		1	
Configuration					L		R	
Delay, Queue Length, and Level of Service								
Approach	Northbound		Southbound		Westbound		Eastbound	
	1	4	7	8	9	10	11	12
Movement			LT	L		R		
Lane Configuration								
v (veh/h)		505	1		319			
C (m) (veh/h)		893	18		444			
v/c		0.57	0.06		0.72			
95% queue length		3.63	0.16		5.63			
Control Delay (s/veh)		14.1	216.5		31.2			
LOS		B	F		D			
Approach Delay (s/veh)	--	--		31.8				
Approach LOS	--	--		D				

TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information						
Analyst			Intersection			MD 543 @ Prospect Mill Road			
Agency/Co.			Jurisdiction			Harford County, MD			
Date Performed			Analysis Year			Background Condition - Revised			
Analysis Time Period									
Project Description 2865 Evamar Farms									
East/West Street: Prospect Mill Road			North/South Street: MD 543						
Intersection Orientation: North-South			Study Period (hrs): 0.25						
Vehicle Volumes and Adjustments									
Major Street		Northbound			Southbound				
Movement		1	2	3	4	5	6		
		L	T	R	L	T	R		
Volume (veh/h)			695	16	456	653			
Peak-Hour Factor, PHF	0.90	0.92	0.92	0.92	0.92	0.92	0.90		
Hourly Flow Rate, HFR (veh/h)	0	755	17	495	709	0			
Percent Heavy Vehicles	0	-	-	2	-	-			
Median Type	Undivided								
RT Channelized			0				0		
Lanes	0	1	0	0	1	0			
Configuration			TR	LT					
Upstream Signal		0			0				
Minor Street		Eastbound			Westbound				
Movement		7	8	9	10	11	12		
		L	T	R	L	T	R		
Volume (veh/h)					4		388		
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.92	0.90	0.90	0.92		
Hourly Flow Rate, HFR (veh/h)	0	0	0	4	0	0	421		
Percent Heavy Vehicles	0	0	0	2	0	0	2		
Percent Grade (%)	0			0					
Flared Approach			N			N			
Storage			0			0			
RT Channelized				0			0		
Lanes	0	0	0	1	0	0	1		
Configuration				L			R		
Delay, Queue Length, and Level of Service									
Approach		Northbound	Southbound	Westbound			Eastbound		
Movement	1	4		7	8	9	10		
Lane Configuration			LT	L		R			
v (veh/h)		495		4		421			
C (m) (veh/h)		843		14		404			
v/c		0.59		0.29		1.04			
95% queue length		3.91		0.75		13.67			
Control Delay (s/veh)		15.2		344.1		88.7			
LOS		C		F		F			
Approach Delay (s/veh)	--	--		91.1					
Approach LOS	--	--		F					

TWO-WAY STOP CONTROL SUMMARY**General Information**

Analyst	J. Carey
Agency/Co.	Traffic Concepts, Inc.
Date Performed	9/17/2014
Analysis Time Period	AM Peak

Site Information

Intersection	MD 543 @ Prospect Mill Road
Jurisdiction	Harford County, MD
Analysis Year	Future Condition - Revised

Project Description 2865 Evamar Farms

East/West Street: Prospect Mill Road

North/South Street: MD 543

Intersection Orientation: North-South

Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound			
	Movement	1	2	3	4	5	6
		L	T	R	L	T	R
Volume (veh/h)		638		24	466	593	
Peak-Hour Factor, PHF	0.90	0.92		0.92	0.92	0.92	0.90
Hourly Flow Rate, HFR (veh/h)	0	693		26	506	644	0
Percent Heavy Vehicles	0	--		--	2	--	--
Median Type	Undivided						
RT Channelized				0			0
Lanes	0	1		0	0	1	0
Configuration				TR	LT		
Upstream Signal		0				0	
Minor Street	Eastbound			Westbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)				1			298
Peak-Hour Factor, PHF	0.90	0.90	--	0.90	0.92	0.90	0.92
Hourly Flow Rate, HFR (veh/h)	0	0		0	1	0	323
Percent Heavy Vehicles	0	0		0	2	0	2
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized				0			0
Lanes	0	0	0	1	0	1	
Configuration					L		R

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
			7	8	9	10	11	12
Movement	1	4						
Lane Configuration		LT	L		R			
v (veh/h)		506	1		323			
C (m) (veh/h)		882	17		436			
v/c		0.57	0.06		0.74			
95% queue length		3.74	0.17		6.01			
Control Delay (s/veh)		14.4	229.6		33.4			
LOS		B	F		D			
Approach Delay (s/veh)	--	--	34.0					
Approach LOS	--	--	D					

TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information								
Analyst	J. Carey		Intersection			MD 543 @ Prospect Mill Road					
Agency/Co.	Traffic Concepts, Inc.		Jurisdiction			Harford County, MD					
Date Performed	9/17/2014		Analysis Year			Future Condition - Revised					
Analysis Time Period	PM Peak										
Project Description	2865 Evamar Farms										
East/West Street:	Prospect Mill Road		North/South Street: MD 543								
Intersection Orientation:	North-South		Study Period (hrs): 0.25								
Vehicle Volumes and Adjustments											
Major Street		Northbound			Southbound						
Movement	1	2	3		4	5	6				
	L	T	R		L	T	R				
Volume (veh/h)		711	16		461	669					
Peak-Hour Factor, PHF	0.90	0.92	0.92		0.92	0.92	0.90				
Hourly Flow Rate, HFR (veh/h)	0	772	17		501	727	0				
Percent Heavy Vehicles	0	-	-		2	--	-				
Median Type	Undivided										
RT Channelized			0					0			
Lanes	0	1	0		0	1	0				
Configuration			TR		LT						
Upstream Signal		0				0					
Minor Street		Eastbound			Westbound						
Movement	7	8	9		10	11	12				
	L	T	R		L	T	R				
Volume (veh/h)					4			391			
Peak-Hour Factor, PHF	0.90	0.90	0.90		0.92	0.90	0.92				
Hourly Flow Rate, HFR (veh/h)	0	0	0		4	0	424				
Percent Heavy Vehicles	0	0	0		2	0	2				
Percent Grade (%)		0				0					
Flared Approach		N				N					
Storage		0				0					
RT Channelized			0					0			
Lanes	0	0	0		1	0	1				
Configuration					L		R				
Delay, Queue Length, and Level of Service											
Approach		Northbound	Southbound	Westbound			Eastbound				
Movement	1	4		7	8	9	10	11			
Lane Configuration			LT	L		R					
v (veh/h)			501	4		424					
C (m) (veh/h)			831	12		395					
v/c			0.60	0.33		1.07					
95% queue length			4.14	0.82		14.55					
Control Delay (s/veh)			15.7	414.8		99.0					
LOS			C	F		F					
Approach Delay (s/veh)	--	--		102.0							
Approach LOS	--	--		F							

TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information					
Analyst	J. Carey		Intersection	MD 543 @ Henderson Road				
Agency/Co.	Traffic Concepts, Inc.		Jurisdiction	Harford County, MD				
Date Performed	9/18/2014		Analysis Year	Existing Condition - Rev				
Analysis Time Period	AM Peak							
Project Description	2865 Evamar Farms							
East/West Street:	Henderson Road		North/South Street:	MD 543				
Intersection Orientation:	North-South		Study Period (hrs):	0.25				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
	Movement	1	2	3	4	5	6	
	L	T	R	L	T	R		
Volume (veh/h)	29	771			629	20		
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate, HFR (veh/h)	32	856	0	0	698	22		
Percent Heavy Vehicles	2	--	--	0	--	--		
Median Type	Undivided							
	RT Channelized			0			0	
Lanes	1	1	0	0	1	1		
Configuration	L	T			T	R		
Upstream Signal		0			0			
Minor Street	Eastbound			Westbound				
	Movement	7	8	9	10	11	12	
	L	T	R	L	T	R		
Volume (veh/h)	17		94					
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR (veh/h)	18	0	104	0	0	0		
Percent Heavy Vehicles	2	0	2	0	0	0		
Percent Grade (%)		0			0			
Flared Approach		N			N			
Storage		0			0			
RT Channelized			1				0	
Lanes	0	0	0	0	0	0		
Configuration		LR						
Delay, Queue Length, and Level of Service								
Approach	Northbound		Southbound		Westbound		Eastbound	
	1	4	7	8	9	10	11	12
Movement	L						LR	
Lane Configuration								
v (veh/h)	32						122	
C (m) (veh/h)	882						305	
v/c	0.04						0.40	
95% queue length	0.11						1.85	
Control Delay (s/veh)	9.2						24.5	
LOS	A						C	
Approach Delay (s/veh)	--	--					24.5	
Approach LOS	--	--					C	

TWO-WAY STOP CONTROL SUMMARY**General Information**

Analyst	J. Carey
Agency/Co.	Traffic Concepts, Inc.
Date Performed	5/1/2014
Analysis Time Period	PM Peak

Site Information

Intersection	MD 543 @ Henderson Road
Jurisdiction	Harford County, MD
Analysis Year	Existing Condition - Revised

Project Description 2865 Evamar Farms

East/West Street: Henderson Road	North/South Street: MD 543
Intersection Orientation: North-South	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
	Movement	1	2	3	4	5
	L	T	R	L	T	R
Volume (veh/h)	98	727			620	20
Peak-Hour Factor, PHF	0.93	0.93	0.90	0.90	0.93	0.93
Hourly Flow Rate, HFR (veh/h)	105	781	0	0	666	21
Percent Heavy Vehicles	2	-	-	0	-	-
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	0	0	1	1
Configuration	L	T			T	R
Upstream Signal		0			0	
Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	15		62			
Peak-Hour Factor, PHF	0.93	0.90	0.93	0.90	0.90	0.90
Hourly Flow Rate, HFR (veh/h)	16	0	66	0	0	0
Percent Heavy Vehicles	2	0	2	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			1			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound			
	Movement	1	4	7	8	9	10	11	12
Lane Configuration	L							LR	
v (veh/h)	105							82	
C (m) (veh/h)	907							263	
v/c	0.12							0.31	
95% queue length	0.39							1.29	
Control Delay (s/veh)	9.5							24.8	
LOS	A							C	
Approach Delay (s/veh)	--	--						24.8	
Approach LOS	--	--						C	

TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information					
Analyst	J. Carey		Intersection	MD 543 @ Henderson Road				
Agency/Co.	Traffic Concepts, Inc.		Jurisdiction	Harford County, MD				
Date Performed	9/18/2014		Analysis Year	Background Condition - Rev				
Analysis Time Period	AM Peak							
Project Description	2865 Evamar Farms							
East/West Street:	Henderson Road		North/South Street:	MD 543				
Intersection Orientation:	North-South		Study Period (hrs):	0.25				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
	1	2	3	4	5	6		
Movement	L	T	R	L	T	R		
Volume (veh/h)	35	880			716	24		
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate, HFR (veh/h)	38	977	0	0	795	26		
Percent Heavy Vehicles	2	--	--	0	--	--		
Median Type	Undivided							
RT Channelized			0				0	
Lanes	1	1	0	0	1	1		
Configuration	L	T			T	R		
Upstream Signal		0			0			
Minor Street	Eastbound			Westbound				
	7	8	9	10	11	12		
Movement	L	T	R	L	T	R		
Volume (veh/h)	20		110					
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate, HFR (veh/h)	22	0	122	0	0	0		
Percent Heavy Vehicles	2	0	2	0	0	0		
Percent Grade (%)		0			0			
Flared Approach		N			N			
Storage		0			0			
RT Channelized			1				0	
Lanes	1	0	1	0	0	0		
Configuration	L		R					
Delay, Queue Length, and Level of Service								
Approach	Northbound		Southbound		Westbound		Eastbound	
	1	4	7	8	9	10	11	12
Movement	L					L		R
Lane Configuration								
v (veh/h)	38					22		122
C (m) (veh/h)	808					78		388
v/c	0.05					0.28		0.31
95% queue length	0.15					1.03		1.32
Control Delay (s/veh)	9.7					68.4		18.5
LOS	A					F		C
Approach Delay (s/veh)	--	--					26.1	
Approach LOS	--	--					D	

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	J. Carey	Intersection	MD 543 @ Henderson Road				
Agency/Co.	Traffic Concepts, Inc.	Jurisdiction	Harford County, MD				
Date Performed	5/1/2014	Analysis Year	Background Condition - Revised				
Analysis Time Period	PM Peak						
Project Description	2865 Evamar Farms						
East/West Street:	Henderson Road	North/South Street:	MD 543				
Intersection Orientation:	North-South	Study Period (hrs):	0.25				
Vehicle Volumes and Adjustments							
Major Street		Northbound			Southbound		
Movement		1	2	3	4	5	6
		L	T	R	L	T	R
Volume (veh/h)	114	834			704	23	
Peak-Hour Factor, PHF	0.93	0.93	0.90		0.90	0.93	0.93
Hourly Flow Rate, HFR (veh/h)	122	896	0		756	24	
Percent Heavy Vehicles	2	-	-		0	-	-
Median Type	Undivided						
RT Channelized			0				0
Lanes	1	1	0		0	1	1
Configuration	L	T			T	R	
Upstream Signal		0			0		
Minor Street		Eastbound			Westbound		
Movement	7	8	9		10	11	12
	L	T	R	L	T	R	
Volume (veh/h)	19		73				
Peak-Hour Factor, PHF	0.93	0.90	0.93		0.90	0.90	0.90
Hourly Flow Rate, HFR (veh/h)	20	0	78		0	0	0
Percent Heavy Vehicles	2	0	2		0	0	0
Percent Grade (%)		0			0		
Flared Approach		N			N		
Storage		0			0		
RT Channelized			1				0
Lanes	1	0	1		0	0	0
Configuration	L		R				
Delay, Queue Length, and Level of Service							
Approach		Northbound	Southbound	Westbound			Eastbound
Movement	1	4		7	8	9	10
Lane Configuration	L					L	R
v (veh/h)	122					20	78
C (m) (veh/h)	837					65	408
v/c	0.15					0.31	0.19
95% queue length	0.51					1.11	0.70
Control Delay (s/veh)	10.0					83.3	15.9
LOS	B					F	C
Approach Delay (s/veh)	--	--					29.7
Approach LOS	--	--					D

TWO-WAY STOP CONTROL SUMMARY								
General Information			Site Information					
Analyst	J. Carey		Intersection	MD 543 @ Henderson Road				
Agency/Co.	Traffic Concepts, Inc.		Jurisdiction	Harford County, MD				
Date Performed	9/18/2014		Analysis Year	Future Condition - Revised				
Analysis Time Period	AM Peak							
Project Description	2865 Evamar Farms							
East/West Street:	Henderson Road		North/South Street:	MD 543				
Intersection Orientation:	North-South		Study Period (hrs):	0.25				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
	Movement	1	2	3	4	5	6	
		L	T	R	L	T	R	
Volume (veh/h)	40	893				728	24	
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR (veh/h)	44	992	0	0	808	26		
Percent Heavy Vehicles	2	--	--	0	--	--		
Median Type	Undivided							
RT Channelized				0			0	
Lanes	1	1	0	0	1	1		
Configuration	L	T			T	R		
Upstream Signal		0			0			
Minor Street	Eastbound			Westbound				
	Movement	7	8	9	10	11	12	
		L	T	R	L	T	R	
Volume (veh/h)	20			114				
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR (veh/h)	22	0	126	0	0	0		
Percent Heavy Vehicles	2	0	2	0	0	0		
Percent Grade (%)		0			0			
Flared Approach		N			N			
Storage		0			0			
RT Channelized			1				0	
Lanes	1	0	1	0	0	0		
Configuration	L		R					
Delay, Queue Length, and Level of Service								
Approach	Northbound		Southbound		Westbound		Eastbound	
	1	4	7	8	9	10	11	12
Movement						L		R
Lane Configuration	L							
v (veh/h)	44					22		126
C (m) (veh/h)	799					73		381
v/c	0.06					0.30		0.33
95% queue length	0.17					1.10		1.42
Control Delay (s/veh)	9.8					74.3		19.0
LOS	A					F		C
Approach Delay (s/veh)	--	--						27.3
Approach LOS	--	--						D

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	J. Carey	Intersection	MD 543 @ Henderson Road					
Agency/Co.	Traffic Concepts, Inc.	Jurisdiction	Harford County, MD					
Date Performed	5/1/2014	Analysis Year	Future Condition - Rev.					
Analysis Time Period	PM Peak							
Project Description	2865 Evamar Farms							
East/West Street	Henderson Road	North/South Street	MD 543					
Intersection Orientation:	North-South	Study Period (hrs)	0.25					
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
	1	2	3	4	5	6		
Movement	L	T	R	L	T	R		
Volume (veh/h)	121	850			720	23		
Peak-Hour Factor, PHF	0.93	0.93	0.90	0.90	0.93	0.93		
Hourly Flow Rate, HFR (veh/h)	130	913	0	0	774	24		
Percent Heavy Vehicles	2	-	-	0	-	-		
Median Type								
RT Channelized			0				0	
Lanes	1	1	0	0	1	1		
Configuration	L	T			T	R		
Upstream Signal		0			0			
Minor Street	Eastbound			Westbound				
	7	8	9	10	11	12		
Movement	L	T	R	L	T	R		
Volume (veh/h)	19		80					
Peak-Hour Factor, PHF	0.93	0.90	0.93	0.90	0.90	0.90		
Hourly Flow Rate, HFR (veh/h)	20	0	86	0	0	0		
Percent Heavy Vehicles	2	0	2	0	0	0		
Percent Grade (%)		0			0			
Flared Approach		N			N			
Storage		0			0			
RT Channelized			1				0	
Lanes	1	0	1	0	0	0		
Configuration	L		R					
Delay, Queue Length, and Level of Service								
Approach	Northbound		Southbound		Westbound		Eastbound	
	1	4	7	8	9	10	11	12
Movement	L					L		R
Lane Configuration								
v (veh/h)	130					20		86
C (m) (veh/h)	824					60		398
v/c	0.16					0.33		0.22
95% queue length	0.56					1.21		0.81
Control Delay (s/veh)	10.2					92.5		16.5
LOS	B					F		C
Approach Delay (s/veh)	--	--					30.9	
Approach LOS	--	--					D	

TWO-WAY STOP CONTROL SUMMARY								
General Information			Site Information					
Analyst	J. Carey		Intersection	MD 543 & Amyclae Drive				
Agency/Co.	Traffic Concepts, Inc.		Jurisdiction	Harford County, MD				
Date Performed	9/17/2014		Analysis Year	Existing Condition - Revised				
Analysis Time Period	AM Peak							
Project Description	2865 Evamar Farms							
East/West Street:	Amyclae Drive		North/South Street:	MD 543				
Intersection Orientation:	North-South		Study Period (hrs):	0.25				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
	1	2	3	4	5	6		
Movement	L	T	R	L	T	R		
Volume (veh/h)	47	600	14	19	772	77		
Peak-Hour Factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94		
Hourly Flow Rate, HFR (veh/h)	50	638	14	20	821	81		
Percent Heavy Vehicles	2	--	--	2	--	--		
Median Type	Undivided							
			0				0	
RT Channelized	1	1	1	1	1	1		
Lanes	L	T	R	L	T	R		
Configuration								
Upstream Signal		0			0			
Minor Street	Eastbound			Westbound				
	7	8	9	10	11	12		
Movement	L	T	R	L	T	R		
Volume (veh/h)	19	5	83	4	5	40		
Peak-Hour Factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94		
Hourly Flow Rate, HFR (veh/h)	20	5	88	4	5	42		
Percent Heavy Vehicles	2	2	2	2	2	2		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0				0	
Lanes	0	1	1	0	1	0		
Configuration	LT		R		LTR			
Delay, Queue Length, and Level of Service								
Approach	Northbound		Southbound		Westbound		Eastbound	
	1	4	7	8	9	10	11	12
Movement	L	L		LTR		LT		R
Lane Configuration								
v (veh/h)	50	20		51		25		88
C (m) (veh/h)	754	935		228		71		374
v/c	0.07	0.02		0.22		0.35		0.24
95% queue length	0.21	0.07		0.83		1.33		0.90
Control Delay (s/veh)	10.1	8.9		25.3		81.1		17.6
LOS	B	A		D		F		C
Approach Delay (s/veh)	--	--		25.3		31.6		
Approach LOS	--	--		D		D		

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	J. Carey	Intersection	MD 543 & Amyclae Drive				
Agency/Co.	Traffic Concepts, Inc.	Jurisdiction	Harford County, MD				
Date Performed	9/17/2014	Analysis Year	Existing Condition - Revised				
Analysis Time Period	PM Peak						
Project Description	2865 Evamar Farms						
East/West Street:	Amyclae Drive	North/South Street:	MD 543				
Intersection Orientation:	North-South	Study Period (hrs):	0.25				
Vehicle Volumes and Adjustments							
Major Street		Northbound			Southbound		
Movement		1	2	3	4	5	6
		L	T	R	L	T	R
Volume (veh/h)		55	806	52	34	577	131
Peak-Hour Factor, PHF		0.97	0.97	0.97	0.97	0.97	0.97
Hourly Flow Rate, HFR (veh/h)		56	830	53	35	594	135
Percent Heavy Vehicles		2	—	—	2	—	—
Median Type		Undivided					
RT Channelized				0			0
Lanes		1	1	1	1	1	1
Configuration		L	T	R	L	T	R
Upstream Signal			0			0	
Minor Street		Eastbound			Westbound		
Movement		7	8	9	10	11	12
		L	T	R	L	T	R
Volume (veh/h)		49	10	96	2	8	37
Peak-Hour Factor, PHF		0.97	0.97	0.97	0.97	0.97	0.97
Hourly Flow Rate, HFR (veh/h)		50	10	98	2	8	38
Percent Heavy Vehicles		2	2	2	2	2	2
Percent Grade (%)		0			0		
Flared Approach			N			N	
Storage			0			0	
RT Channelized				0			0
Lanes		0	1	1	0	1	0
Configuration		LT		R		LTR	
Delay, Queue Length, and Level of Service							
Approach		Northbound	Southbound	Westbound		Eastbound	
Movement		1	4	7	8	9	10
Lane Configuration		L	L		LTR		LT
v (veh/h)		56	35		48		60
C (m) (veh/h)		875	766		194		62
v/c		0.06	0.05		0.25		0.97
95% queue length		0.20	0.14		0.94		4.62
Control Delay (s/veh)		9.4	9.9		29.6		215.0
LOS		A	A		D		F
Approach Delay (s/veh)		—	—		29.6		90.2
Approach LOS		—	—		D		F

TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information						
Analyst	J. Carey		Intersection	MD 543 & Amyclae Drive					
Agency/Co.	Traffic Concepts, Inc.		Jurisdiction	Harford County, MD					
Date Performed	9/17/2014		Analysis Year	Background Condition - Revised					
Analysis Time Period	AM Peak								
Project Description	2865 Evamar Farms								
East/West Street:	Amyclae Drive		North/South Street:	MD 543					
Intersection Orientation:	North-South		Study Period (hrs):	0.25					
Vehicle Volumes and Adjustments									
Major Street	Northbound			Southbound					
Movement	1	2	3	4	5	6			
	L	T	R	L	T	R			
Volume (veh/h)	47	688	14	19	883	77			
Peak-Hour Factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94			
Hourly Flow Rate, HFR (veh/h)	50	731	14	20	939	81			
Percent Heavy Vehicles	2	-	-	2	-	-			
Median Type	Undivided								
RT Channelized			0			0			
Lanes	1	1	1	1	1	1			
Configuration	L	T	R	L	T	R			
Upstream Signal		0			0				
Minor Street	Eastbound			Westbound					
Movement	7	8	9	10	11	12			
	L	T	R	L	T	R			
Volume (veh/h)	19	5	83	4	5	40			
Peak-Hour Factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94			
Hourly Flow Rate, HFR (veh/h)	20	5	88	4	5	42			
Percent Heavy Vehicles	2	2	2	2	2	2			
Percent Grade (%)	0			0					
Flared Approach		N			N				
Storage		0			0				
RT Channelized			0			0			
Lanes	0	1	1	0	1	0			
Configuration	LT		R		LTR				
Delay, Queue Length, and Level of Service									
Approach	Northbound	Southbound	Westbound			Eastbound			
Movement	1	4	7	8	9	10			
Lane Configuration	L	L		LTR		LT			
v (veh/h)	50	20		51		25			
C (m) (veh/h)	680	863		172		49			
v/c	0.07	0.02		0.30		0.51			
95% queue length	0.24	0.07		1.17		1.91			
Control Delay (s/veh)	10.7	9.3		34.5		138.6			
LOS	B	A		D		F			
Approach Delay (s/veh)	--	--		34.5		46.6			
Approach LOS	--	--		D		E			

TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information				
Analyst		J. Carey	Intersection Jurisdiction Analysis Year			MD 543 & Amyclae Drive Harford County, MD Background Condition - Revised	
Agency/Co.		Traffic Concepts, Inc.					
Date Performed		9/17/2014					
Analysis Time Period		PM Peak					
Project Description 2865 Evamar Farms							
East/West Street: Amyclae Drive			North/South Street: MD 543				
Intersection Orientation: North-South			Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments							
Major Street		Northbound			Southbound		
Movement		1	2	3	4	5	
		L	T	R	L	T	
Volume (veh/h)		55	917	52	34	660	
Peak-Hour Factor, PHF		0.97	0.97	0.97	0.97	0.97	
Hourly Flow Rate, HFR (veh/h)		56	945	53	35	680	
Percent Heavy Vehicles		2	-	-	2	-	
Median Type		Undivided					
RT Channelized				0		0	
Lanes		1	1	1	1	1	
Configuration		L	T	R	L	T	
Upstream Signal			0			0	
Minor Street		Eastbound			Westbound		
Movement		7	8	9	10	11	
		L	T	R	L	T	
Volume (veh/h)		49	10	96	2	8	
Peak-Hour Factor, PHF		0.97	0.97	0.97	0.97	0.97	
Hourly Flow Rate, HFR (veh/h)		50	10	98	2	8	
Percent Heavy Vehicles		2	2	2	2	2	
Percent Grade (%)		0			0		
Flared Approach			N			N	
Storage			0			0	
RT Channelized				0		0	
Lanes		0	1	1	0	1	
Configuration		LT		R		LTR	
Delay, Queue Length, and Level of Service							
Approach		Northbound	Southbound	Westbound		Eastbound	
Movement		1	4	7	8	9	10
Lane Configuration		L	L		LTR		LT
v (veh/h)		56	35		48		60
C (m) (veh/h)		812	693		149		43
v/c		0.07	0.05		0.32		1.40
95% queue length		0.22	0.16		1.29		5.92
Control Delay (s/veh)		9.8	10.5		40.2		423.6
LOS		A	B		E		F
Approach Delay (s/veh)		--	--		40.2		170.3
Approach LOS		--	--		E		F

TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information						
Analyst			Intersection			MD 543 & Amyclae Drive			
Agency/Co.			Jurisdiction			Harford County, MD			
Date Performed			Analysis Year			Future Condition - Revised			
Analysis Time Period									
Project Description			2865 Evamar Farms						
East/West Street:			Amyclae Drive						
Intersection Orientation:			North-South						
			North/South Street:						
			MD 543						
			Study Period (hrs):						
Vehicle Volumes and Adjustments									
Major Street		Northbound			Southbound				
Movement		1	2	3	4	5	6		
		L	T	R	L	T	R		
Volume (veh/h)		47	747	14	19	960	77		
Peak-Hour Factor, PHF		0.94	0.94	0.94	0.94	0.94	0.94		
Hourly Flow Rate, HFR (veh/h)		50	794	14	20	1021	81		
Percent Heavy Vehicles		2	-	--	2	-	-		
Median Type		Undivided							
RT Channelized				0			0		
Lanes		1	1	1	1	1	1		
Configuration		L	T	R	L	T	R		
Upstream Signal			0			0			
Minor Street		Eastbound			Westbound				
Movement		7	8	9	10	11	12		
		L	T	R	L	T	R		
Volume (veh/h)		19	5	83	4	5	40		
Peak-Hour Factor, PHF		0.94	0.94	0.94	0.94	0.94	0.94		
Hourly Flow Rate, HFR (veh/h)		20	5	88	4	5	42		
Percent Heavy Vehicles		2	2	2	2	2	2		
Percent Grade (%)			0			0			
Flared Approach			N			N			
Storage			0			0			
RT Channelized				0			0		
Lanes		0	1	1	0	1	0		
Configuration		LT		R		LTR			
Delay, Queue Length, and Level of Service									
Approach		Northbound	Southbound	Westbound			Eastbound		
Movement		1	4	7	8	9	10		
Lane Configuration		L	L		LTR		LT		
v (veh/h)		50	20		51		25		
C (m) (veh/h)		633	817		139		38		
v/c		0.08	0.02		0.37		0.66		
95% queue length		0.26	0.08		1.53		2.36		
Control Delay (s/veh)		11.2	9.5		45.2		207.1		
LOS		B	A		E		F		
Approach Delay (s/veh)		--	--	45.2			63.7		
Approach LOS		--	--	E			F		

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	J. Carey	Intersection	MD 543 & Amyclae Drive				
Agency/Co.	Traffic Concepts, Inc.	Jurisdiction	Harford County, MD				
Date Performed	9/17/2014	Analysis Year	Future Condition - Revised				
Analysis Time Period	PM Peak						
Project Description	2865 Evamar Farms						
East/West Street:	Amyclae Drive	North/South Street:	MD 543				
Intersection Orientation:	North-South	Study Period (hrs):	0.25				
Vehicle Volumes and Adjustments							
Major Street		Northbound			Southbound		
Movement		1	2	3	4	5	6
		L	T	R	L	T	R
Volume (veh/h)	55	1012	52	34	751	131	
Peak-Hour Factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	
Hourly Flow Rate, HFR (veh/h)	56	1043	53	35	774	135	
Percent Heavy Vehicles	2	-	-	2	-	-	
Median Type	Undivided						
RT Channelized			0				0
Lanes	1	1	1	1	1	1	
Configuration	L	T	R	L	T	R	
Upstream Signal		0			0		
Minor Street		Eastbound			Westbound		
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)	49	10	96	2	8	37	
Peak-Hour Factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	
Hourly Flow Rate, HFR (veh/h)	50	10	98	2	8	38	
Percent Heavy Vehicles	2	2	2	2	2	2	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0				0
Lanes	0	1	1	0	1	0	
Configuration	LT		R		LTR		
Delay, Queue Length, and Level of Service							
Approach		Northbound	Southbound	Westbound		Eastbound	
Movement	1	4	7	8	9	10	11
Lane Configuration	L	L		LTR		LT	
v (veh/h)	56	35		48		60	
C (m) (veh/h)	749	637		115		30	
v/c	0.07	0.05		0.42		2.00	
95% queue length	0.24	0.17		1.77		6.98	
Control Delay (s/veh)	10.2	11.0		57.1		748.3	
LOS	B	B		F		F	C
Approach Delay (s/veh)	--	--		57.1		294.7	
Approach LOS	--	--		F		F	

ALL-WAY STOP CONTROL ANALYSIS

General Information			Site Information		
Analyst	J. Carey		Intersection	Prospect Mill Rd @ Thomas Run	
Agency/Co.	Traffic Concepts, Inc.		Jurisdiction	Harford County, MD	
Date Performed	9/17/2014		Analysis Year	EXISTING Condition - Revised	
Analysis Time Period	AM Peak				

Project ID 2865 Evamar Farms

East/West Street: Prospect Mill Road

North/South Street: Thomas Run Road

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound					
	L	T	R	L	T	R			
Movement	72	297	72	39	193	32			
Volume (veh/h)									
%Thrus Left Lane									
Approach	Northbound			Southbound					
	L	T	R	L	T	R			
Movement	76	73	41	41	79	63			
Volume (veh/h)									
%Thrus Left Lane									
		Eastbound		Westbound		Northbound		Southbound	
		L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR		
PHF	0.98		0.98		0.98		0.98		
Flow Rate (veh/h)	449		267		192		185		
% Heavy Vehicles	2		2		2		2		
No. Lanes	1		1		1		1		
Geometry Group	1		1		1		1		
Duration, T	0.25								

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	0.2		0.1		0.4		0.2	
Prop. Right-Turns	0.2		0.1		0.2		0.3	
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0	
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj. computed	-0.0		-0.0		-0.0		-0.1	

Departure Headway and Service Time

hd, initial value (s)	3.20		3.20		3.20		3.20	
x, initial	0.40		0.24		0.17		0.16	
hd, final value (s)	5.64		5.98		6.44		6.35	
x, final value	0.70		0.44		0.34		0.33	
Move-up time, m (s)	2.0		2.0		2.0		2.0	
Service Time, t _s (s)	3.6		4.0		4.4		4.3	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	616		517		442		435	
Delay (s/veh)	20.89		13.67		12.77		12.39	
LOS	C		B		B		B	
Approach: Delay (s/veh)	20.89		13.67		12.77		12.39	
LOS	C		B		B		B	
Intersection Delay (s/veh)	16.26							
Intersection LOS	C							

ALL-WAY STOP CONTROL ANALYSIS

General Information				Site Information				
Analyst	J. Carey	Intersection	Prospect Mill Rd @ Thomas Run					
Agency/Co.	Traffic Concepts, Inc.	Jurisdiction	Harford County, MD					
Date Performed	5/1/2014	Analysis Year	Existing Condition -Revised					
Analysis Time Period	PM Peak							
Project ID	2865 Evamar Farms							
East/West Street:	Prospect Mill Road	North/South Street:	Thomas Run Road					
Volume Adjustments and Site Characteristics								
Approach	Eastbound			Westbound				
Movement	L	T	R	L	T	R		
Volume (veh/h)	38	230	61	56	285	9		
%Thrus Left Lane								
Approach	Northbound			Southbound				
Movement	L	T	R	L	T	R		
Volume (veh/h)	37	48	43	5	47	25		
%Thrus Left Lane								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	0.90		0.90		0.90		0.90	
Flow Rate (veh/h)	364		388		141		84	
% Heavy Vehicles	2		2		2		2	
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T				0.25				
Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.1		0.2		0.3		0.1	
Prop. Right-Turns	0.2		0.0		0.3		0.3	
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0	
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.1		0.1		-0.1		-0.1	
Departure Headway and Service Time								
hd, initial value (s)	3.20		3.20		3.20		3.20	
x, initial	0.32		0.34		0.13		0.07	
hd, final value (s)	5.12		5.18		5.91		6.01	
x, final value	0.52		0.56		0.23		0.14	
Move-up time, m (s)	2.0		2.0		2.0		2.0	
Service Time, t _s (s)	3.1		3.2		3.9		4.0	
Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	614		638		391		334	
Delay (s/veh)	13.47		14.52		10.67		9.99	
LOS	B		B		B		A	
Approach: Delay (s/veh)	13.47		14.52		10.67		9.99	
LOS	B		B		B		A	
Intersection Delay (s/veh)				13.18				
Intersection LOS				B				

ALL-WAY STOP CONTROL ANALYSIS

General Information			Site Information			
Analyst	J. Carey		Intersection	Prospect Mill Rd @ Thomas Run		
Agency/Co.	Traffic Concepts, Inc.		Jurisdiction	Harford County, MD		
Date Performed	9/17/2014		Analysis Year	Background Condition - Revised		
Analysis Time Period	AM Peak					
Project ID	2865 Evamar Farms					
East/West Street:	Prospect Mill Road		North/South Street:	Thomas Run Road		
Volume Adjustments and Site Characteristics						
Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	80	355	83	48	221	36
%Thrus Left Lane						
Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	93	81	50	46	88	70
%Thrus Left Lane						
	Eastbound		Westbound		Northbound	
	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR	
PHF	0.98		0.98		0.98	
Flow Rate (veh/h)	527		309		227	
% Heavy Vehicles	2		2		2	
No. Lanes	1		1		1	
Geometry Group	1		1		1	
Duration, T	0.25					
Saturation Headway Adjustment Worksheet						
Prop. Left-Turns	0.2		0.2		0.4	
Prop. Right-Turns	0.2		0.1		0.2	
Prop. Heavy Vehicle	0.0		0.0		0.0	
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.0		-0.0		-0.0	
Departure Headway and Service Time						
hd, initial value (s)	3.20		3.20		3.20	
x, initial	0.47		0.27		0.20	
hd, final value (s)	6.24		6.74		7.26	
x, final value	0.91		0.58		0.46	
Move-up time, m (s)	2.0		2.0		2.0	
Service Time, t _s (s)	4.2		4.7		5.3	
Capacity and Level of Service						
	Eastbound		Westbound		Northbound	
	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	570		499		454	
Delay (s/veh)	44.10		18.58		16.23	
LOS	E		C		C	
Approach: Delay (s/veh)	44.10		18.58		16.23	
LOS	E		C		C	
Intersection Delay (s/veh)	28.21					
Intersection LOS	D					

ALL-WAY STOP CONTROL ANALYSIS

General Information			Site Information					
Analyst	J. Carey		Intersection	Prospect Mill Rd @ Thomas Run				
Agency/Co.	Traffic Concepts, Inc.		Jurisdiction	Harford County, MD				
Date Performed	5/1/2014		Analysis Year	Background Condition -Revised				
Analysis Time Period	PM Peak							
Project ID	2865 Evamar Farms							
East/West Street:	Prospect Mill Road		North/South Street:	Thomas Run Road				
Volume Adjustments and Site Characteristics								
Approach	Eastbound			Westbound				
Movement	L	T	R	L	T			
Volume (veh/h)	42	271	75	77	325			
%Thrus Left Lane					10			
Approach	Northbound			Southbound				
Movement	L	T	R	L	T			
Volume (veh/h)	45	54	50	6	52			
%Thrus Left Lane					28			
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	0.90		0.90		0.90		0.90	
Flow Rate (veh/h)	430		457		165		94	
% Heavy Vehicles	2		2		2		2	
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T	0.25							
Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.1		0.2		0.3		0.1	
Prop. Right-Turns	0.2		0.0		0.3		0.3	
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0	
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.1		0.1		-0.1		-0.2	
Departure Headway and Service Time								
hd, initial value (s)	3.20		3.20		3.20		3.20	
x, initial	0.38		0.41		0.15		0.08	
hd, final value (s)	5.48		5.54		6.45		6.63	
x, final value	0.65		0.70		0.30		0.17	
Move-up time, m (s)	2.0		2.0		2.0		2.0	
Service Time, t _s (s)	3.5		3.5		4.4		4.6	
Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	635		632		415		344	
Delay (s/veh)	18.22		20.60		12.13		11.01	
LOS	C		C		B		B	
Approach: Delay (s/veh)	18.22		20.60		12.13		11.01	
LOS	C		C		B		B	
Intersection Delay (s/veh)	17.70							
Intersection LOS	C							

ALL-WAY STOP CONTROL ANALYSIS								
General Information				Site Information				
Analyst	J. Carey	Intersection	Prospect Mill Rd @ Thomas Run					
Agency/Co.	Traffic Concepts, Inc.	Jurisdiction	Harford County, MD					
Date Performed	9/17/2014	Analysis Year	Future Condition - Revised					
Analysis Time Period	AM Peak							
Project ID	2865 Evamar Farms							
East/West Street:	Prospect Mill Road	North/South Street:	Thomas Run Road					
Volume Adjustments and Site Characteristics								
Approach	Eastbound			Westbound				
Movement	L	T	R	L	T	R		
Volume (veh/h)	80	355	84	48	221	36		
%Thrus Left Lane								
Approach	Northbound			Southbound				
Movement	L	T	R	L	T	R		
Volume (veh/h)	97	81	50	46	88	70		
%Thrus Left Lane								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	0.98		0.98		0.98		0.98	
Flow Rate (veh/h)	528		309		231		206	
% Heavy Vehicles	2		2		2		2	
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T				0.25				
Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.2		0.2		0.4		0.2	
Prop. Right-Turns	0.2		0.1		0.2		0.3	
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0	
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.0		-0.0		-0.0		-0.1	
Departure Headway and Service Time								
hd, initial value (s)	3.20		3.20		3.20		3.20	
x, initial	0.47		0.27		0.21		0.18	
hd, final value (s)	6.27		6.78		7.28		7.27	
x, final value	0.92		0.58		0.47		0.42	
Move-up time, m (s)	2.0		2.0		2.0		2.0	
Service Time, t _s (s)	4.3		4.8		5.3		5.3	
Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	567		497		454		449	
Delay (s/veh)	45.28		18.77		16.51		15.35	
LOS	E		C		C		C	
Approach: Delay (s/veh)	45.28		18.77		16.51		15.35	
LOS	E		C		C		C	
Intersection Delay (s/veh)				28.79				
Intersection LOS				D				

ALL-WAY STOP CONTROL ANALYSIS

General Information			Site Information							
Analyst	J. Carey			Intersection	Prospect Mill Rd @ Thomas Run					
Agency/Co.	Traffic Concepts, Inc.			Jurisdiction	Harford County, MD					
Date Performed	5/1/2014			Analysis Year	Future Condition -Revised					
Analysis Time Period	PM Peak									
Project ID	2865 Evamar Farms									
East/West Street:	Prospect Mill Road			North/South Street:	Thomas Run Road					
Volume Adjustments and Site Characteristics										
Approach	Eastbound			Westbound						
Movement	L	T	R	L	T	R				
Volume (veh/h)	42	271	80	77	325	10				
%Thrus Left Lane										
Approach	Northbound			Southbound						
Movement	L	T	R	L	T	R				
Volume (veh/h)	48	54	50	6	52	28				
%Thrus Left Lane										
	Eastbound		Westbound		Northbound		Southbound			
	L1	L2	L1	L2	L1	L2	L1			
Configuration	LTR		LTR		LTR		LTR			
PHF	0.90		0.90		0.90		0.90			
Flow Rate (veh/h)	435		457		168		94			
% Heavy Vehicles	2		2		2		2			
No. Lanes	1		1		1		1			
Geometry Group	1		1		1		1			
Duration, T	0.25									
Saturation Headway Adjustment Worksheet										
Prop. Left-Turns	0.1		0.2		0.3		0.1			
Prop. Right-Turns	0.2		0.0		0.3		0.3			
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0			
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2			
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6			
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7			
hadj, computed	-0.1		0.1		-0.1		-0.2			
Departure Headway and Service Time										
hd, initial value (s)	3.20		3.20		3.20		3.20			
x, initial	0.39		0.41		0.15		0.08			
hd, final value (s)	5.49		5.57		6.48		6.66			
x, final value	0.66		0.71		0.30		0.17			
Move-up time, m (s)	2.0		2.0		2.0		2.0			
Service Time, t _s (s)	3.5		3.6		4.5		4.7			
Capacity and Level of Service										
	Eastbound		Westbound		Northbound		Southbound			
	L1	L2	L1	L2	L1	L2	L1			
Capacity (veh/h)	634		628		418		344			
Delay (s/veh)	18.64		20.86		12.25		11.06			
LOS	C		C		B		B			
Approach: Delay (s/veh)	18.64		20.86		12.25		11.06			
LOS	C		C		B		B			
Intersection Delay (s/veh)	17.97									
Intersection LOS	C									

TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information				
Analyst			Intersection				
Agency/Co.			Amyclae Drive & Cloverfield Ct				
Date Performed			Jurisdiction				
Analysis Time Period			Harford County, MD				
Project Description #2865 Evamar Farms			Analysis Year				
East/West Street: Cloverfield Court			Existing Condition - Revised				
Intersection Orientation: North-South							
Study Period (hrs): 0.25							
Vehicle Volumes and Adjustments							
Major Street		Northbound			Southbound		
Movement		1	2	3	4	5	6
		L	T	R	L	T	R
Volume (veh/h)		0	13			35	0
Peak-Hour Factor, PHF		0.90	0.90	1.00	1.00	0.90	0.90
Hourly Flow Rate, HFR (veh/h)		0	14	0	0	38	0
Percent Heavy Vehicles		2	-	-	0	-	-
Median Type Undivided							
RT Channelized				0			0
Lanes		0	1	0	0	1	0
Configuration		LT					TR
Upstream Signal			0			0	
Minor Street		Eastbound			Westbound		
Movement		7	8	9	10	11	12
		L	T	R	L	T	R
Volume (veh/h)		0		4			
Peak-Hour Factor, PHF		0.90	1.00	0.90	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)		0	0	4	0	0	0
Percent Heavy Vehicles		2	0	2	0	0	0
Percent Grade (%)			0			0	
Flared Approach			N			N	
Storage			0			0	
RT Channelized				0			0
Lanes		0	0	0	0	0	0
Configuration			LR				
Delay, Queue Length, and Level of Service							
Approach		Northbound	Southbound	Westbound			Eastbound
Movement		1	4	7	8	9	10
Lane Configuration		LT					LR
v (veh/h)		0					4
C (m) (veh/h)		1572					1034
v/c		0.00					0.00
95% queue length		0.00					0.01
Control Delay (s/veh)		7.3					8.5
LOS		A					A
Approach Delay (s/veh)	--	--					8.5
Approach LOS	--	--					A

TWO-WAY STOP CONTROL SUMMARY							
General Information			Site Information				
Analyst	J. Carey		Intersection	Amyclae Drive & Cloverfield Ct			
Agency/Co.	Traffic Concepts, Inc.		Jurisdiction	Harford County, MD			
Date Performed	9/17/2014		Analysis Year	Existing Condition - Revised			
Analysis Time Period	PM Peak						
Project Description	#2865 Evamar Farms						
East/West Street:	Cloverfield Court		North/South Street:	Amyclae Drive			
Intersection Orientation:	North-South		Study Period (hrs):	0.25			
Vehicle Volumes and Adjustments							
Major Street		Northbound			Southbound		
Movement		1	2	3	4	5	6
		L	T	R	L	T	R
Volume (veh/h)		2	37			24	0
Peak-Hour Factor, PHF		0.90	0.90	1.00	1.00	0.90	0.90
Hourly Flow Rate, HFR (veh/h)		2	41	0	0	26	0
Percent Heavy Vehicles		2	—	—	0	—	—
Median Type	Undivided						
RT Channelized				0			0
Lanes		0	1	0	0	1	0
Configuration		LT					TR
Upstream Signal			0			0	
Minor Street		Eastbound			Westbound		
Movement		7	8	9	10	11	12
		L	T	R	L	T	R
Volume (veh/h)		0		1			
Peak-Hour Factor, PHF		0.90	1.00	-0.90	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)		0	0	1	0	0	0
Percent Heavy Vehicles		2	0	2	0	0	0
Percent Grade (%)			0			0	
Flared Approach			N			N	
Storage			0			0	
RT Channelized				0			0
Lanes		0	0	0	0	0	0
Configuration			LR				
Delay, Queue Length, and Level of Service							
Approach		Northbound	Southbound	Westbound			Eastbound
Movement		1	4	7	8	9	10
Lane Configuration		LT					LR
v (veh/h)		2					1
C (m) (veh/h)		1588					1050
v/c		0.00					0.00
95% queue length		0.00					0.00
Control Delay (s/veh)		7.3					8.4
LOS		A					A
Approach Delay (s/veh)	--	--					8.4
Approach LOS	--	--					A

TWO-WAY STOP CONTROL SUMMARY**General Information**

Analyst	J. Carey
Agency/Co.	Traffic Concepts, Inc.
Date Performed	9/17/2014
Analysis Time Period	AM Peak

Site Information

Intersection	Amyclae Drive & Cloverfield Ct
Jurisdiction	Harford County, MD
Analysis Year	Background Condition - Revised

Project Description #2865 Evamar Farms

East/West Street: Cloverfield Court

North/South Street: Amyclae Drive

Intersection Orientation: North-South

Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound			
	Movement	1	2	3	4	5	6
		L	T	R	L	T	R
Volume (veh/h)	4	13			35	0	
Peak-Hour Factor, PHF	0.90	0.90	1.00	1.00	0.90	0.90	
Hourly Flow Rate, HFR (veh/h)	4	14	0	0	38	0	
Percent Heavy Vehicles	2	--	--	0	--	--	
Median Type	Undivided						
RT Channelized			0			0	
Lanes	0	1	0	0	1	0	
Configuration	LT					TR	
Upstream Signal		0			0		

Minor Street	Eastbound			Westbound			
	Movement	7	8	9	10	11	12
	L	T	R	L	T	R	
Volume (veh/h)	0		13				
Peak-Hour Factor, PHF	0.90	1.00	0.90	1.00	1.00	1.00	
Hourly Flow Rate, HFR (veh/h)	0	0	14	0	0	0	
Percent Heavy Vehicles	2	0	2	0	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	0	0	0	0	0	
Configuration		LR					

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound			
	Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT							LR	
v (veh/h)	4							14	
C (m) (veh/h)	1572							1034	
v/c	0.00							0.01	
95% queue length	0.01							0.04	
Control Delay (s/veh)	7.3							8.5	
LOS	A							A	
Approach Delay (s/veh)	--	--						8.5	
Approach LOS	--	--						A	

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	J. Carey	Intersection		Amyclae Drive & Cloverfield Ct			
Agency/Co.	Traffic Concepts, Inc.	Jurisdiction		Harford County, MD			
Date Performed	9/17/2014	Analysis Year		Background Condition - Revised			
Analysis Time Period	PM Peak						
Project Description	#2865 Evamar Farms						
East/West Street:	Cloverfield Court	North/South Street:	Amyclae Drive				
Intersection Orientation:	North-South	Study Period (hrs):	0.25				
Vehicle Volumes and Adjustments							
Major Street		Northbound			Southbound		
Movement		1	2	3	4	5	6
		L	T	R	L	T	R
Volume (veh/h)		2	37			24	0
Peak-Hour Factor, PHF	0.90	0.90	1.00		1.00	0.90	0.90
Hourly Flow Rate, HFR (veh/h)	2	41	0		0	26	0
Percent Heavy Vehicles	2	--	--		0	--	--
Median Type	Undivided						
RT Channelized				0			0
Lanes	0	1	0		0	1	0
Configuration	LT						TR
Upstream Signal			0			0	
Minor Street		Eastbound			Westbound		
Movement		7	8	9	10	11	12
		L	T	R	L	T	R
Volume (veh/h)		0		1			
Peak-Hour Factor, PHF	0.90	1.00	0.90		1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	0	1		0	0	0
Percent Heavy Vehicles	2	0	2		0	0	0
Percent Grade (%)	0				0		
Flared Approach			N			N	
Storage			0			0	
RT Channelized				0			0
Lanes	0	0	0		0	0	0
Configuration			LR				
Delay, Queue Length, and Level of Service							
Approach		Northbound	Southbound	Westbound			Eastbound
Movement		1	4	7	8	9	10
Lane Configuration	LT						LR
v (veh/h)	2						1
C (m) (veh/h)	1588						1050
v/c	0.00						0.00
95% queue length	0.00						0.00
Control Delay (s/veh)	7.3						8.4
LOS	A						A
Approach Delay (s/veh)	--	--					8.4
Approach LOS	--	--					A

TWO-WAY STOP CONTROL SUMMARY									
General Information				Site Information					
Analyst	J. Carey			Intersection					
Agency/Co.	Traffic Concepts, Inc.			Amyclae Drive & Cloverfield Ct					
Date Performed	9/17/2014			Jurisdiction					
Analysis Time Period	AM Peak			Harford County, MD					
Project Description #2865 Evamar Farms									
East/West Street: Cloverfield Court	North/South Street: Amyclae Drive			Analysis Year					
Intersection Orientation: North-South	Study Period (hrs): 0.25			Future Condition - Revised					
Vehicle Volumes and Adjustments									
Major Street	Northbound				Southbound				
	Movement	1	2	3	4	5	6		
		L	T	R	L	T	R		
Volume (veh/h)		4	13			35	0		
Peak-Hour Factor, PHF		0.90	0.90	1.00	1.00	0.90	0.90		
Hourly Flow Rate, HFR (veh/h)		4	14	0	0	38	0		
Percent Heavy Vehicles		2	-	-	0	-	-		
Median Type	Undivided								
	RT Channelized			0				0	
Lanes		0	1	0	0	1	0		
Configuration		LT						TR	
Upstream Signal			0			0			
Minor Street	Eastbound				Westbound				
	Movement	7	8	9	10	11	12		
		L	T	R	L	T	R		
Volume (veh/h)		0		13					
Peak-Hour Factor, PHF		0.90	1.00	0.90	1.00	1.00	1.00		
Hourly Flow Rate, HFR (veh/h)		0	0	14	0	0	0		
Percent Heavy Vehicles		2	0	2	0	0	0		
Percent Grade (%)			0			0			
Flared Approach			N			N			
Storage			0			0			
RT Channelized				0				0	
Lanes		0	0	0	0	0	0		
Configuration			LR						
Delay, Queue Length, and Level of Service									
Approach	Northbound		Southbound		Westbound			Eastbound	
	Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT						LR	
v (veh/h)		4						14	
C (m) (veh/h)		1572						1034	
v/c		0.00						0.01	
95% queue length		0.01						0.04	
Control Delay (s/veh)		7.3						8.5	
LOS		A						A	
Approach Delay (s/veh)	--	--						8.5	
Approach LOS	--	--						A	

TWO-WAY STOP CONTROL SUMMARY												
General Information				Site Information								
Analyst	J. Carey			Intersection	Amyclae Drive & Cloverfield Ct							
Agency/Co.	Traffic Concepts, Inc.			Jurisdiction	Harford County, MD							
Date Performed	9/17/2014			Analysis Year	Future Condition - Revised							
Analysis Time Period	PM Peak											
Project Description	#2865 Evamar Farms											
East/West Street:	Cloverfield Court			North/South Street:	Amyclae Drive							
Intersection Orientation:	North-South			Study Period (hrs):	0.25							
Vehicle Volumes and Adjustments												
Major Street	Northbound			Southbound								
	Movement	1	2	3	4	5	6					
		L	T	R	L	T	R					
Volume (veh/h)	13	37				24	0					
Peak-Hour Factor, PHF	0.90	0.90	1.00	1.00	0.90	0.90						
Hourly Flow Rate, HFR (veh/h)	14	41	0	0	26	0						
Percent Heavy Vehicles	2	-	-	0	-	-						
Median Type	Undivided											
RT Channelized			0					0				
Lanes	0	1	0	0	1	0						
Configuration	LT						TR					
Upstream Signal		0				0						
Minor Street	Eastbound			Westbound								
	Movement	7	8	9	10	11	12					
		L	T	R	L	T	R					
Volume (veh/h)	0		7									
Peak-Hour Factor, PHF	0.90	1.00	0.90	1.00	1.00	1.00	1.00					
Hourly Flow Rate, HFR (veh/h)	0	0	7	0	0	0						
Percent Heavy Vehicles	2	0	2	0	0	0	0					
Percent Grade (%)	0			0								
Flared Approach		N				N						
Storage		0				0						
RT Channelized			0				0					
Lanes	0	0	0	0	0	0	0					
Configuration		LR										
Delay, Queue Length, and Level of Service												
Approach	Northbound		Southbound		Westbound			Eastbound				
	1	4	7	8	9	10	11	12				
Movement												
Lane Configuration	LT						LR					
v (veh/h)	14						7					
C (m) (veh/h)	1588						1050					
v/c	0.01						0.01					
95% queue length	0.03						0.02					
Control Delay (s/veh)	7.3						8.5					
LOS	A						A					
Approach Delay (s/veh)	--	--					8.5					
Approach LOS	--	--					A					

TWO-WAY STOP CONTROL SUMMARY										
General Information				Site Information						
Analyst	J. Carey				Intersection		Shakespeare Dr & Fallstaff Rd			
Agency/Co.	Traffic Concepts, Inc.				Jurisdiction		Harford County, MD			
Date Performed	9/17/2014				Analysis Year		Existing Condition - Revised			
Analysis Time Period	AM Peak									
Project Description	#2865 Evamar Farms									
East/West Street:	Shakespeare Drive			North/South Street: Fallstaff Road						
Intersection Orientation:	North-South			Study Period (hrs): 0.25						
Vehicle Volumes and Adjustments										
Major Street	Northbound				Southbound					
	Movement	1	2	3	4	5	6			
	L	T	R	L	T	R				
Volume (veh/h)	1	1			1	7				
Peak-Hour Factor, PHF	0.90	0.90	1.00	1.00	0.90	0.90				
Hourly Flow Rate, HFR (veh/h)	1	1	0	0	1	7				
Percent Heavy Vehicles	2	-	-	0	-	-				
Median Type	Undivided									
	RT Channelized			0			0			
Lanes	0	1	0	0	1	0				
Configuration	LT				TR					
Upstream Signal		0			0					
Minor Street	Eastbound				Westbound					
	Movement	7	8	9	10	11	12			
	L	T	R	L	T	R				
Volume (veh/h)	6		1							
Peak-Hour Factor, PHF	0.90	1.00	0.90	1.00	1.00	1.00				
Hourly Flow Rate, HFR (veh/h)	6	0	1	0	0	0				
Percent Heavy Vehicles	2	0	2	0	0	0				
Percent Grade (%)	0				0					
Flared Approach		N			N					
Storage		0			0					
RT Channelized			0				0			
Lanes	0	0	0	0	0	0				
Configuration	LR									
Delay, Queue Length, and Level of Service										
Approach	Northbound		Southbound		Westbound		Eastbound			
	Movement	1	4	7	8	9	10	11	12	
Lane Configuration	LT				LR					
v (veh/h)	1				7					
C (m) (veh/h)	1612				1022					
v/c	0.00				0.01					
95% queue length	0.00				0.02					
Control Delay (s/veh)	7.2				8.5					
LOS	A				A					
Approach Delay (s/veh)	-				8.5					
Approach LOS	-				A					

TWO-WAY STOP CONTROL SUMMARY									
General Information				Site Information					
Analyst	J. Carey			Intersection		Shakespeare Dr & Fallstaff Rd			
Agency/Co.	Traffic Concepts, Inc.			Jurisdiction		Harford County, MD			
Date Performed	9/17/2014			Analysis Year		Existing Condition - Revised			
Analysis Time Period	PM Peak								
Project Description	#2865 Evamar Farms								
East/West Street:	Shakespeare Drive			North/South Street: Fallstaff Road					
Intersection Orientation:	North-South			Study Period (hrs): 0.25					
Vehicle Volumes and Adjustments									
Major Street		Northbound			Southbound				
Movement		1	2	3	4	5	6		
		L	T	R	L	T	R		
Volume (veh/h)		1	0			0	6		
Peak-Hour Factor, PHF		0.90	0.90	1.00	1.00	0.90	0.90		
Hourly Flow Rate, HFR (veh/h)		1	0	0	0	0	6		
Percent Heavy Vehicles		2	--	--	0	--	--		
Median Type	Undivided								
RT Channelized				0			0		
Lanes		0	1	0	0	1	0		
Configuration		LT					TR		
Upstream Signal			0			0			
Minor Street		Eastbound			Westbound				
Movement		7	8	9	10	11	12		
		L	T	R	L	T	R		
Volume (veh/h)		12		0					
Peak-Hour Factor, PHF		0.90	1.00	0.90	1.00	1.00	1.00		
Hourly Flow Rate, HFR (veh/h)		13	0	0	0	0	0		
Percent Heavy Vehicles		2	0	2	0	0	0		
Percent Grade (%)		0				0			
Flared Approach			N			N			
Storage			0			0			
RT Channelized				0			0		
Lanes		0	0	0	0	0	0		
Configuration		LR							
Delay, Queue Length, and Level of Service									
Approach		Northbound	Southbound	Westbound			Eastbound		
Movement		1	4	7	8	9	10		
Lane Configuration		LT					LR		
v (veh/h)		1					13		
C (m) (veh/h)		1615					1016		
v/c		0.00					0.01		
95% queue length		0.00					0.04		
Control Delay (s/veh)		7.2					8.6		
LOS		A				A			
Approach Delay (s/veh)		--	--				8.6		
Approach LOS		--	--				A		

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	J. Carey			Intersection	Shakespeare Dr & Fallstaff Rd		
Agency/Co.	Traffic Concepts, Inc.			Jurisdiction	Harford County, MD		
Date Performed	9/17/2014			Analysis Year	Background Condition - Revised		
Analysis Time Period	AM Peak						
Project Description	#2865 Evamar Farms						
East/West Street:	Shakespeare Drive			North/South Street:	Fallstaff Road		
Intersection Orientation:	North-South			Study Period (hrs):	0.25		
Vehicle Volumes and Adjustments							
Major Street		Northbound			Southbound		
Movement		1	2	3	4	5	6
		L	T	R	L	T	R
Volume (veh/h)		1	1			1	7
Peak-Hour Factor, PHF	0.90	0.90	1.00		1.00	0.90	0.90
Hourly Flow Rate, HFR (veh/h)	1	1	0		0	1	7
Percent Heavy Vehicles	2	-	-		0	-	-
Median Type	Undivided						
RT Channelized				0			0
Lanes	0	1	0		0	1	0
Configuration	LT						TR
Upstream Signal			0			0	
Minor Street		Eastbound			Westbound		
Movement		7	8	9	10	11	12
		L	T	R	L	T	R
Volume (veh/h)		6		1			
Peak-Hour Factor, PHF	0.90	1.00	0.90		1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	6	0	1		0	0	0
Percent Heavy Vehicles	2	0	2		0	0	0
Percent Grade (%)		0				0	
Flared Approach			N			N	
Storage			0			0	
RT Channelized				0			0
Lanes	0	0	0		0	0	0
Configuration			LR				
Delay, Queue Length, and Level of Service							
Approach		Northbound	Southbound	Westbound			Eastbound
Movement		1	4	7	8	9	10
Lane Configuration	LT						LR
v (veh/h)	1						7
C (m) (veh/h)	1612						1022
v/c	0.00						0.01
95% queue length	0.00						0.02
Control Delay (s/veh)	7.2						8.5
LOS	A						A
Approach Delay (s/veh)	--	--					8.5
Approach LOS	--	--					A

TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information										
Analyst	J. Carey		Intersection			Shakespeare Dr & Fallstaff Rd							
Agency/Co.	Traffic Concepts, Inc.		Jurisdiction			Harford County, MD							
Date Performed	9/17/2014		Analysis Year			Background Condition - Revised							
Analysis Time Period	PM Peak												
Project Description #2865 Evamar Farms													
East/West Street: Shakespeare Drive			North/South Street: Fallstaff Road										
Intersection Orientation: North-South			Study Period (hrs): 0.25										
Vehicle Volumes and Adjustments													
Major Street		Northbound			Southbound								
Movement		1	2	3	4	5	6						
		L	T	R	L	T	R						
Volume (veh/h)		1	0			0	6						
Peak-Hour Factor, PHF		0.90	0.90	1.00	1.00	0.90	0.90						
Hourly Flow Rate, HFR (veh/h)		1	0	0	0	0	6						
Percent Heavy Vehicles		2	--	--	0	--	--						
Median Type													
<i>Undivided</i>													
RT Channelized				0				0					
Lanes		0	1	0	0	1	0						
Configuration		LT											
Upstream Signal		0			0								
Minor Street		Eastbound			Westbound								
Movement		7	8	9	10	11	12						
		L	T	R	L	T	R						
Volume (veh/h)		12		0									
Peak-Hour Factor, PHF		0.90	1.00	0.90	1.00	1.00	1.00						
Hourly Flow Rate, HFR (veh/h)		13	0	0	0	0	0						
Percent Heavy Vehicles		2	0	2	0	0	0						
Percent Grade (%)		0			0								
Flared Approach			N			N							
Storage			0			0							
RT Channelized				0				0					
Lanes		0	0	0	0	0	0						
Configuration		LR											
Delay, Queue Length, and Level of Service													
Approach		Northbound	Southbound	Westbound			Eastbound						
Movement		1	4	7	8	9	10	11					
Lane Configuration		LT						LR					
v (veh/h)		1						13					
C (m) (veh/h)		1615						1016					
v/c		0.00						0.01					
95% queue length		0.00						0.04					
Control Delay (s/veh)		7.2						8.6					
LOS		A						A					
Approach Delay (s/veh)		--						8.6					
Approach LOS		--						A					

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	J. Carey			Intersection	Shakespeare Dr & Fallstaff Rd		
Agency/Co.	Traffic Concepts, Inc.			Jurisdiction	Harford County, MD		
Date Performed	9/17/2014			Analysis Year	Future Condition - Revised		
Analysis Time Period	AM Peak						
Project Description	#2865 Evamar Farms						
East/West Street:	Shakespeare Drive			North/South Street:	Fallstaff Road		
Intersection Orientation:	North-South			Study Period (hrs):	0.25		
Vehicle Volumes and Adjustments							
Major Street	Northbound			Southbound			
	1	2	3	4	5	6	
Movement	L	T	R	L	T	R	
Volume (veh/h)	1	5			2	7	
Peak-Hour Factor, PHF	0.90	0.90	1.00	1.00	0.90	0.90	
Hourly Flow Rate, HFR (veh/h)	1	5	0	0	2	7	
Percent Heavy Vehicles	2	-	-	0	-	-	
Median Type	Undivided						
			0				0
RT Channelized							
Lanes	0	1	0	0	1	0	
Configuration	LT						TR
Upstream Signal		0			0		
Minor Street	Eastbound			Westbound			
	7	8	9	10	11	12	
Movement	L	T	R	L	T	R	
Volume (veh/h)	6		1				
Peak-Hour Factor, PHF	0.90	1.00	0.90	1.00	1.00	1.00	
Hourly Flow Rate, HFR (veh/h)	6	0	1	0	0	0	
Percent Heavy Vehicles	2	0	2	0	0	0	
Percent Grade (%)		0			0		
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0				0
Lanes	0	0	0	0	0	0	
Configuration		LR					
Delay, Queue Length, and Level of Service							
Approach	Northbound	Southbound	Westbound			Eastbound	
	1	4	7	8	9	10	11
Movement							12
Lane Configuration	LT						LR
v (veh/h)	1						7
C (m) (veh/h)	1611						1015
v/c	0.00						0.01
95% queue length	0.00						0.02
Control Delay (s/veh)	7.2						8.6
LOS	A						A
Approach Delay (s/veh)	--	-					8.6
Approach LOS	-	-					A

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	J. Carey			Intersection	Shakespeare Dr & Fallstaff Rd		
Agency/Co.	Traffic Concepts, Inc.			Jurisdiction	Harford County, MD		
Date Performed	9/17/2014			Analysis Year	Future Condition - Revised		
Analysis Time Period	PM Peak						
Project Description	#2865 Evamar Farms						
East/West Street:	Shakespeare Drive			North/South Street:	Fallstaff Road		
Intersection Orientation:	North-South			Study Period (hrs):	0.25		
Vehicle Volumes and Adjustments							
Major Street		Northbound			Southbound		
Movement		1	2	3	4	5	6
		L	T	R	L	T	R
Volume (veh/h)		1	3			5	6
Peak-Hour Factor, PHF	0.90	0.90	1.00		1.00	0.90	0.90
Hourly Flow Rate, HFR (veh/h)	1	3	0		0	5	6
Percent Heavy Vehicles	2	—	—		0	—	—
Median Type	Undivided						
RT Channelized				0			0
Lanes	0	1	0		0	1	0
Configuration	LT						
Upstream Signal		0				0	
Minor Street		Eastbound			Westbound		
Movement		7	8	9	10	11	12
		L	T	R	L	T	R
Volume (veh/h)		12		0			
Peak-Hour Factor, PHF	0.90		1.00	0.90		1.00	1.00
Hourly Flow Rate, HFR (veh/h)	13		0	0		0	0
Percent Heavy Vehicles	2	0	2		0	0	0
Percent Grade (%)	0						
Flared Approach			N			N	
Storage		0				0	
RT Channelized				0			0
Lanes	0	0	0		0	0	0
Configuration	LR						
Delay, Queue Length, and Level of Service							
Approach		Northbound	Southbound	Westbound			Eastbound
Movement		1	4	7	8	9	10
Lane Configuration	LT						
v (veh/h)		1					13
C (m) (veh/h)	1608						1005
v/c	0.00						0.01
95% queue length	0.00						0.04
Control Delay (s/veh)	7.2						8.6
LOS	A						A
Approach Delay (s/veh)	—	—					8.6
Approach LOS	—	—					A

MOVEMENT SUMMARY

▼ Site: Existing AM

Moores Mill Road & Southampton Road
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
East: Moores Mill Road											
6	T1	199	2.0	0.292	5.2	LOS A	1.9	49.3	0.42	0.51	36.3
16	R2	94	2.0	0.292	5.2	LOS A	1.9	49.3	0.42	0.51	35.3
Approach		293	2.0	0.292	5.2	LOS A	1.9	49.3	0.42	0.51	35.9
North: Southampton Road											
7	L2	126	2.0	0.304	11.3	LOS B	2.0	49.6	0.52	0.65	34.9
14	R2	144	2.0	0.304	6.0	LOS A	2.0	49.6	0.52	0.65	34.1
Approach		270	2.0	0.304	8.5	LOS A	2.0	49.6	0.52	0.65	34.4
West: Moores Mill Road											
5	L2	129	2.0	0.400	10.7	LOS B	3.0	76.8	0.47	0.56	35.3
2	T1	286	2.0	0.400	5.3	LOS A	3.0	76.8	0.47	0.56	35.3
Approach		414	2.0	0.400	7.0	LOS A	3.0	76.8	0.47	0.56	35.3
All Vehicles		978	2.0	0.400	6.9	LOS A	3.0	76.8	0.47	0.57	35.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

▽ Site: Existing PM

Moores Mill Road & Southampton Road
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Prop. Queued	Effective Stop Rate per veh	Average Speed mph		
		Total veh/h	HV %	w/c	sec	veh	ft				
East: Moores Mill Road											
6	T1	360	2.0	0.447	4.6	LOS A	3.7	93.4	0.30	0.44	36.6
16	R2	199	2.0	0.447	4.6	LOS A	3.7	93.4	0.30	0.44	35.6
Approach		559	2.0	0.447	4.6	LOS A	3.7	93.4	0.30	0.44	36.3
North: Southampton Road											
7	L2	59	2.0	0.206	12.6	LOS B	1.2	29.5	0.60	0.72	34.5
14	R2	94	2.0	0.206	7.3	LOS A	1.2	29.5	0.60	0.72	33.7
Approach		153	2.0	0.206	9.3	LOS A	1.2	29.5	0.60	0.72	34.0
West: Moores Mill Road											
5	L2	53	2.0	0.275	9.9	LOS A	1.9	49.4	0.28	0.46	36.1
2	T1	269	2.0	0.275	4.5	LOS A	1.9	49.4	0.28	0.46	36.2
Approach		322	2.0	0.275	5.4	LOS A	1.9	49.4	0.28	0.46	36.2
All Vehicles		1034	2.0	0.447	5.5	LOS A	3.7	93.4	0.34	0.49	35.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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**SIDRA
INTERSECTION 6**

MOVEMENT SUMMARY

▼ Site: Back AM

Moores Mill Road & Southampton Road
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
East: Moores Mill Road											
6	T1	226	2.0	0.337	5.4	LOS A	2.4	59.7	0.47	0.53	36.1
16	R2	107	2.0	0.337	5.4	LOS A	2.4	59.7	0.47	0.53	35.2
Approach		332	2.0	0.337	5.4	LOS A	2.4	59.7	0.47	0.53	35.8
North: Southampton Road											
7	L2	143	2.0	0.354	11.7	LOS B	2.4	60.2	0.57	0.68	34.7
14	R2	161	2.0	0.354	6.4	LOS A	2.4	60.2	0.57	0.68	33.9
Approach		304	2.0	0.354	8.9	LOS A	2.4	60.2	0.57	0.68	34.3
West: Moores Mill Road											
5	L2	143	2.0	0.461	10.9	LOS B	3.7	94.8	0.53	0.58	35.1
2	T1	323	2.0	0.461	5.6	LOS A	3.7	94.8	0.53	0.58	35.1
Approach		467	2.0	0.461	7.2	LOS A	3.7	94.8	0.53	0.58	35.1
All Vehicles		1103	2.0	0.461	7.1	LOS A	3.7	94.8	0.52	0.59	35.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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**SIDRA
INTERSECTION 6**

MOVEMENT SUMMARY

▼ Site: Back PM

Moores Mill Road & Southampton Road
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
East: Moores Mill Road											
6	T1	406	2.0	0.509	4.7	LOS A	4.6	116.9	0.35	0.45	36.5
16	R2	226	2.0	0.509	4.7	LOS A	4.6	116.9	0.35	0.45	35.5
Approach		631	2.0	0.509	4.7	LOS A	4.6	116.9	0.35	0.45	36.1
North: Southampton Road											
7	L2	68	2.0	0.245	13.2	LOS B	1.4	36.2	0.64	0.75	34.2
14	R2	106	2.0	0.245	7.8	LOS A	1.4	36.2	0.64	0.75	33.4
Approach		173	2.0	0.245	9.9	LOS A	1.4	36.2	0.64	0.75	33.7
West: Moores Mill Road											
5	L2	60	2.0	0.315	10.0	LOS A	2.3	59.2	0.32	0.47	36.0
2	T1	303	2.0	0.315	4.6	LOS A	2.3	59.2	0.32	0.47	36.1
Approach		363	2.0	0.315	5.5	LOS A	2.3	59.2	0.32	0.47	36.1
All Vehicles		1168	2.0	0.509	5.7	LOS A	4.6	116.9	0.39	0.50	35.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

▼ Site: Future AM

Moores Mill Road & Southampton Road
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows	Deg Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh.	Average Speed mph	
		Total veh/h	HV %	v/c	sec	veh					
East: Moores Mill Road											
6	T1	226	2.0	0.340	5.5	LOS A	2.4	60.3	0.48	0.53	
16	R2	107	2.0	0.340	5.5	LOS A	2.4	60.3	0.48	0.53	
Approach		332	2.0	0.340	5.5	LOS A	2.4	60.3	0.48	0.53	
North: Southampton Road											
7	L2	143	2.0	0.362	11.7	LOS B	2.4	62.0	0.58	0.68	
14	R2	168	2.0	0.362	6.4	LOS A	2.4	62.0	0.58	0.68	
Approach		311	2.0	0.362	8.8	LOS A	2.4	62.0	0.58	0.68	
West: Moores Mill Road											
5	L2	149	2.0	0.466	11.0	LOS B	3.8	96.5	0.54	0.59	
2	T1	323	2.0	0.466	5.6	LOS A	3.8	96.5	0.54	0.59	
Approach		472	2.0	0.466	7.3	LOS A	3.8	96.5	0.54	0.59	
All Vehicles		1116	2.0	0.466	7.2	LOS A	3.8	96.5	0.53	0.60	

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

▼ Site: Future PM

Moores Mill Road & Southampton Road
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop Queued	Effective Stop Rate per veh	Average Speed mph
East: Moores Mill Road											
6	T1	406	2.0	0.520	4.8	LOS A	4.7	120.4	0.39	0.46	36.4
16	R2	226	2.0	0.520	4.8	LOS A	4.7	120.4	0.39	0.46	35.4
Approach											
North: Southampton Road											
7	L2	68	2.0	0.257	13.2	LOS B	1.5	38.4	0.65	0.76	34.2
14	R2	113	2.0	0.257	7.9	LOS A	1.5	38.4	0.65	0.76	33.4
Approach											
West: Moores Mill Road											
5	L2	69	2.0	0.322	10.0	LOS A	2.4	61.2	0.32	0.48	35.9
2	T1	303	2.0	0.322	4.6	LOS A	2.4	61.2	0.32	0.48	36.0
Approach											
All Vehicles											
		1184	2.0	0.520	5.8	LOS A	4.7	120.4	0.41	0.51	35.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

PEAK HOUR TURNING MOVEMENT COUNT

INTERSECTION: MD 543 @ PROSPECT MILL ROAD

COUNT BY: B. HEADLEY

COUNTY: HARFORD

DATE: SEPTEMBER 9, 2014

WEATHER: OVERCAST

DAY: TUESDAY

TIME	MD 543 NORTHBOUND			MD 543 SOUTHBOUND			EASTBOUND			PROSPECT MILL RD WESTBOUND			TOTAL
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	
AM													
7:00-7:15		110	3	88	134					0		56	391
7:15-7:30		146	6	123	129					0		59	463
7:30-7:45		131	4	117	129					0		69	450
7:45-8:00		143	0	75	121					1		67	407
8:00-8:15		127	0	67	88					1		63	346
8:15-8:30		112	0	79	97					0		59	347
8:30-8:45		111	1	86	99					0		61	358
8:45-9:00		112	3	112	101					1		73	402
PEAK HR 7:00-8:00		530	14	403	513								
TOTALS												251	PHF 0.92
PM													
4:00-4:15		154	2	88	109					2		87	442
4:15-4:30		152	1	66	115					0		60	394
4:30-4:45		143	6	75	135					1		78	438
4:45-5:00		132	2	80	119					0		113	446
5:00-5:15		133	0	95	139					0		88	455
5:15-5:30		135	4	96	148					2		83	468
5:30-5:45		177	3	91	131					1		73	476
5:45-6:00		168	4	112	144					1		94	523
PEAK HR 5:00-6:00		613	14	394	562					4		338	
TOTALS													PHF 0.92

PEAK HOUR TURNING MOVEMENT COUNT

INTERSECTION: MD 543 @ HENDERSON ROAD

COUNTY: HARFORD

COUNT BY: B. HEADLEY

DATE: SEPTEMBER 4, 2014

WEATHER: CLEAR

DAY: THURSDAY

TIME	MD 543 NORTHBOUND			MD 543 SOUTHBOUND			HENDERSON RD EASTBOUND			WESTBOUND			TOTAL
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	
AM													
7:00-7:15	3	305			160	7	6		22				503
7:15-7:30	5	169			208	4	6		20				412
7:30-7:45	12	141			133	5	3		33				327
7:45-8:00	9	156			128	4	2		19				318
8:00-8:15	4	110			110	1	5		15				245
8:15-8:30	6	113			100	3	2		21				245
8:30-8:45	10	101			115	2	1		19				248
8:45-9:00	5	109			113	1	4		26				258
PEAK HR 7:00-8:00	29	771			629	20	17		94				PHF 0.78
TOTALS													
PM													
4:00-4:15	21	157			145	5	3		8				339
4:15-4:30	17	174			155	5	4		14				369
4:30-4:45	24	187			177	7	3		16				414
4:45-5:00	22	177			153	4	2		9				367
5:00-5:15	27	175			140	6	4		16				368
5:15-5:30	25	188			150	3	6		21				393
5:30-5:45	22	176			145	5	9		14				371
5:45-6:00	9	159			176	11	8		21				384
PEAK HR 4:30-5:30	98	727			620	20	15		62				PHF 0.93
TOTALS													

PEAK HOUR TURNING MOVEMENT COUNT

INTERSECTION: MD 543 @ AMYCLAE DRIVE

COUNT BY: B. HEADLEY

COUNTY: HARFORD

DATE: SEPTEMBER 10, 2014

WEATHER: OVERCAST

DAY: WEDNESDAY

TIME	MD 543 NORTHBOUND			MD 543 SOUTHBOUND			AMYCLAE DRIVE EASTBOUND			AMYCLAE DRIVE WESTBOUND			TOTAL
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	
AM													
7:00-7:15	5	192	2	4	182	17	4	1	23	0	0	16	446
7:15-7:30	10	116	5	6	219	19	1	0	18	1	2	7	404
7:30-7:45	20	157	2	6	198	24	10	2	16	2	1	7	445
7:45-8:00	12	135	5	3	173	17	4	2	26	1	2	10	390
8:00-8:15	8	87	5	2	181	12	9	1	17	1	1	7	331
8:15-8:30	6	103	2	3	168	15	9	1	30	0	4	5	346
8:30-8:45	9	113	8	3	152	17	11	2	28	6	4	3	356
8:45-9:00	14	77	3	3	138	18	14	1	20	2	2	3	295
PEAK HR													RPH
7:00-8:00	47	600	14	19	772	77	19	5	83	4	5	40	0.94
TOTALS													
PM													
4:00-4:15	17	187	7	7	138	22	14	0	22	6	0	8	428
4:15-4:30	16	195	11	10	141	19	10	0	31	2	0	6	441
4:30-4:45	17	198	10	8	137	16	8	0	20	2	2	13	431
4:45-5:00	24	189	13	11	115	17	13	2	33	1	2	4	424
5:00-5:15	11	199	12	10	139	20	14	3	23	0	5	10	446
5:15-5:30	11	212	12	8	141	42	10	1	24	0	0	10	471
5:30-5:45	21	200	10	8	141	43	11	3	29	1	1	11	479
5:45-6:00	12	195	18	8	156	26	14	3	20	1	2	6	461
PEAK HR													RPH
5:00-6:00	55	806	52	34	577	131	49	10	96	2	8	37	0.97
TOTALS													

PEAK HOUR TURNING MOVEMENT COUNT

INTERSECTION: MOORES MILL RD @ SOUTHAMPTON RD

COUNT BY: P. PIRMANN COUNTY: HARFORD

COUNT BY: P. PIRMANN

DATE: SEPTEMBER 3, 2014

WEATHER: CLEAR

DAY: WEDNESDAY

TIME	NORTHBOUND			SOUTHAMPTON			MOORES MILL			MOORES MILL			TOTAL
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	
AM													
7:00-7:15				17		15	22	54			30	23	161
7:15-7:30				35		23	24	75			43	14	214
7:30-7:45				48		22	33	55			36	21	215
7:45-8:00				24		63	35	67			50	40	279
8:00-8:15				6		22	24	60			50	10	172
8:15-8:30				16		25	8	56			26	11	142
8:30-8:45				11		22	12	44			37	8	134
8:45-9:00				15		14	19	66			43	10	167
PEAK HR 7:15-8:15				113		130	118	257			129	85	PHE 0.79
TOTALS													
PM													
4:00-4:15				17		28	4	41			67	39	196
4:15-4:30				11		24	5	54			64	48	206
4:30-4:45				16		23	8	52			70	47	216
4:45-5:00				12		25	10	61			94	42	244
5:00-5:15				13		12	12	69			86	46	238
5:15-5:30				17		19	9	54			69	42	210
5:30-5:45				11		29	17	58			75	49	239
5:45-6:00				15		22	7	48			62	44	198
PEAK HR 4:45-5:45				53		85	48	242			124	179	PHE 0.95
TOTALS													

TRAFFIC CONCEPTS, INC.
 7525 CONNELLEY DRIVE, SUITE B
 HANOVER, MARYLAND 21076
 410-760-2911 FAX 410-760-2915
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M:12865

PEAK HOUR TURNING MOVEMENT COUNT

INTERSECTION: AMYCLAE DRIVE @ CLOVERFIELD CT

COUNTY: HARFORD

COUNT BY: M. ROSEN

DATE: SEPTEMBER 10, 2014

WEATHER: CLEAR

DAY: WEDNESDAY

TIME	AMYCLAE DRIVE NORTHBOUND			AMYCLAE DRIVE SOUTHBOUND			CLOVERFIELD CT EASTBOUND			WESTBOUND			TOTAL
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	
AM													
7:00-7:15	0	3				12	0	0		2			17
7:15-7:30	0	4				6	0	0		1			11
7:30-7:45	0	2				11	0	0		1			14
7:45-8:00	0	4				6	0	0		0			10
8:00-8:15	0	2				4	0	0		0			6
8:15-8:30	0	3				7	0	0		0			10
8:30-8:45	0	2				7	0	0		1			10
8:45-9:00	1	2				5	0	0		0			8
PEAK HR													PHF
7:00-8:00	0	13				35	0	0		4			0.76
TOTALS													
PM													
4:00-4:15	1	7				6	0	0		0			14
4:15-4:30	0	4				4	0	0		0			8
4:30-4:45	0	5				7	0	0		1			13
4:45-5:00	1	8				5	0	0		0			14
5:00-5:15	0	9				2	0	0		0			11
5:15-5:30	1	6				9	0	0		1			17
5:30-5:45	0	14				8	0	0		0			22
5:45-6:00	0	7				4	0	0		0			11
PEAK HR													PHF
4:45-5:45	2	37				24	0	0		1			0.73
TOTALS													

PEAK HOUR TURNING MOVEMENT COUNT

INTERSECTION: SHAKESPEARE DR @ FALLSTAFF RD

COUNTY: HARFORD

COUNT BY: P. PIRMAN

DATE: SEPTEMBER 10, 2014

WEATHER: OVERCAST

DAY: WEDNESDAY

TIME	Fallstaff Road NORTHBOUND			Fallstaff Road SOUTHBOUND			Shakespeare Drive EASTBOUND			WESTBOUND			TOTAL
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	
AM													
7:00-7:15	0	1				1	4	2		1			9
7:15-7:30	0	0				0	2	2		0			4
7:30-7:45	0	0				0	0	1		0			1
7:45-8:00	1	0				0	1	1		0			3
8:00-8:15	0	0				0	2	1		0			3
8:15-8:30	0	0				0	1	2		0			3
8:30-8:45	0	1				0	1	0		0			2
8:45-9:00	0	0				0	4	0		0			4
AM PEAK HR													PHF
7:00-8:00	1	1				1	7	6		1			0.47
TOTALS													
PM													
4:00-4:15	0	0				0	0	2		0			2
4:15-4:30	1	0				0	2	3		0			6
4:30-4:45	0	0				0	4	2		0			6
4:45-5:00	0	0				0	0	5		0			5
5:00-5:15	0	0				0	1	0		0			1
5:15-5:30	0	1				0	1	1		0			3
5:30-5:45	0	0				0	2	2		1			5
5:45-6:00	0	0				0	1	1		1			3
PM PEAK HR													PHF
4:00-5:00	1	0				0	0	6	12	0			0.79
TOTALS													

TRAFFIC CONCEPTS, INC.
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 E-MAIL TRAFFIC@TRAFFIC-CONCEPTS.COM

M:\2865

PEAK HOUR TURNING MOVEMENT COUNT

INTERSECTION: PROSPECT MILL RD @ THOMAS RUN RD

COUNT BY: S. TAYLOR

COUNTY: HARFORD

DATE: SEPTEMBER 4, 2014

WEATHER: CLEAR

DAY: THURSDAY

TIME	THOMAS RUN RD NORTHBOUND			THOMAS RUN RD SOUTHBOUND			PROSPECT MILL RD EASTBOUND			PROSPECT MILL RD WESTBOUND			TOTAL
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	
AM													
7:00-7:15	13	12	6	1	7	5	7	63	9	8	47	9	187
7:15-7:30	17	22	7	4	19	9	8	72	12	10	54	11	245
7:30-7:45	21	18	10	7	22	14	14	74	21	9	49	5	264
7:45-8:00	19	12	8	13	14	16	15	81	16	12	52	9	267
8:00-8:15	14	19	11	9	21	12	19	73	19	9	47	10	263
8:15-8:30	21	21	13	11	25	19	21	69	15	8	46	7	276
8:30-8:45	22	21	9	8	19	16	17	74	22	10	48	6	272
8:45-9:00	17	26	7	10	23	14	16	52	19	9	51	8	252
PEAK HR													
7:45-8:45	76	73	41	41	79	63	72	297	72	39	193	32	PHF 0.98
TOTALS													
PM													
4:00-4:15	4	10	9	1	7	5	10	52	11	15	60	1	185
4:15-4:30	2	15	10	0	6	3	9	48	10	18	56	0	177
4:30-4:45	6	8	9	2	6	4	10	54	15	17	74	4	209
4:45-5:00	6	11	13	1	8	8	5	55	14	14	88	2	225
5:00-5:15	7	15	5	1	8	5	10	49	16	12	57	3	188
5:15-5:30	11	7	8	2	20	8	8	57	16	13	73	3	226
5:30-5:45	13	15	17	1	11	4	15	69	15	17	67	1	245
5:45-6:00	8	8	14	2	12	10	7	57	11	21	73	1	224
PEAK HR													
4:45-5:45	37	43	43	5	47	25	38	230	61	56	285	9	PHF 0.90
TOTALS													

Continuing Care Retirement Community (255)

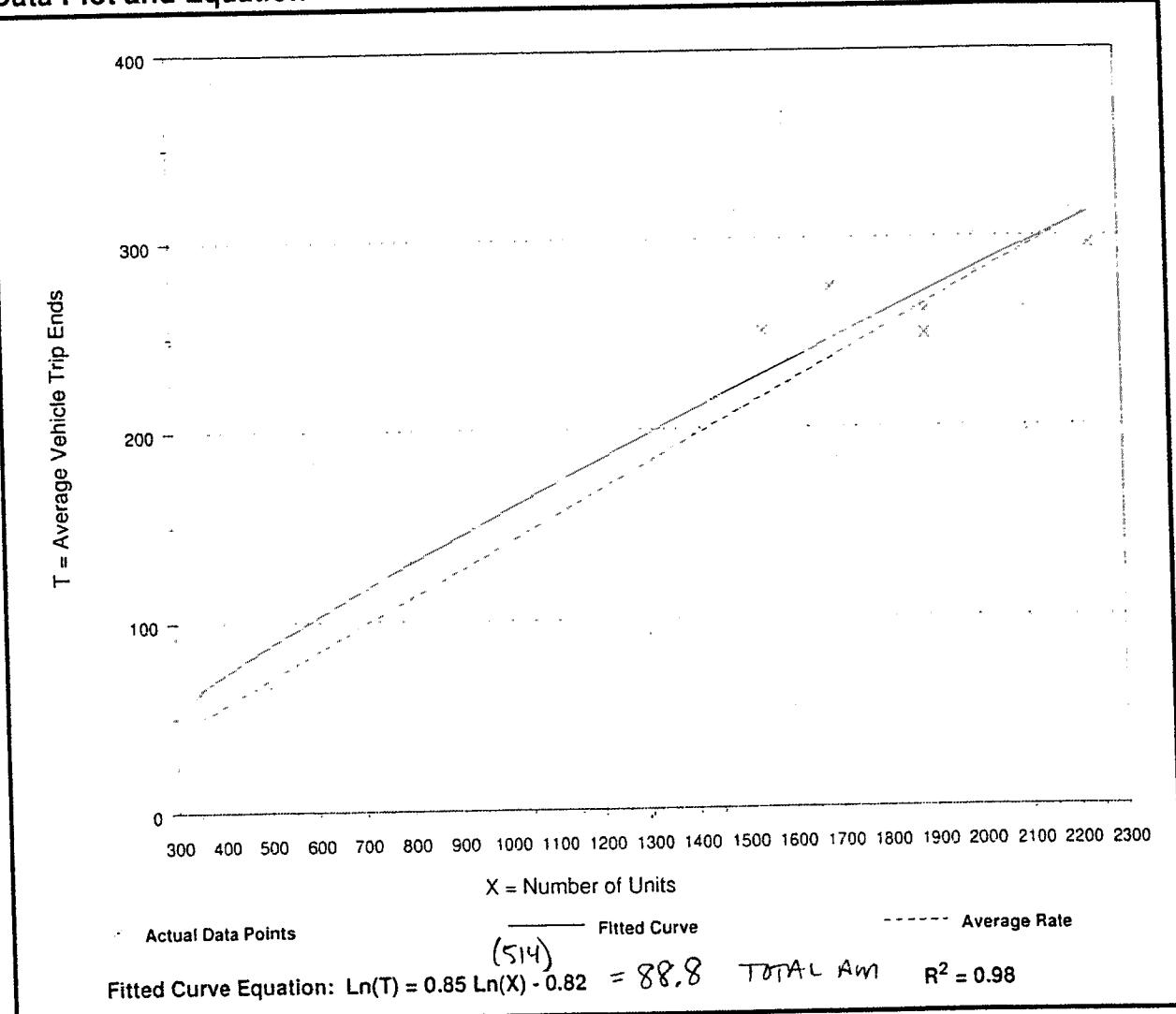
Average Vehicle Trip Ends vs: Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Number of Studies: 6
Average Number of Units: 1,602
Directional Distribution: 65% entering, 35% exiting

Trip Generation per Unit

Average Rate	Range of Rates	Standard Deviation
0.14	0.13 - 0.18	0.38

Data Plot and Equation



Continuing Care Retirement Community (255)

Average Vehicle Trip Ends vs: Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Number of Studies: 6
Average Number of Units: 1,602
Directional Distribution: 39% entering, 61% exiting

Trip Generation per Unit

Average Rate	Range of Rates	Standard Deviation
0.16	0.14 - 0.19	0.40

Data Plot and Equation

